

THE
Gardeners Dictionary :
Containing the METHODS of
CULTIVATING *and* IMPROVING
THE
Kitchen, Fruit *and* Flower Garden,
AS ALSO THE
Physick Garden, Wilderness, Conservatory,
AND
V I N E Y A R D.

Abridg'd from the FOLIO EDITION,
By the AUTHOR, *PHILIP MILLER*,
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their BOTANICK-GARDEN, in *Chelsea*, and F. R. S.

IN TWO VOLUMES.

— *Digna manet divini gloria ruris.*

VIRG. GEO.

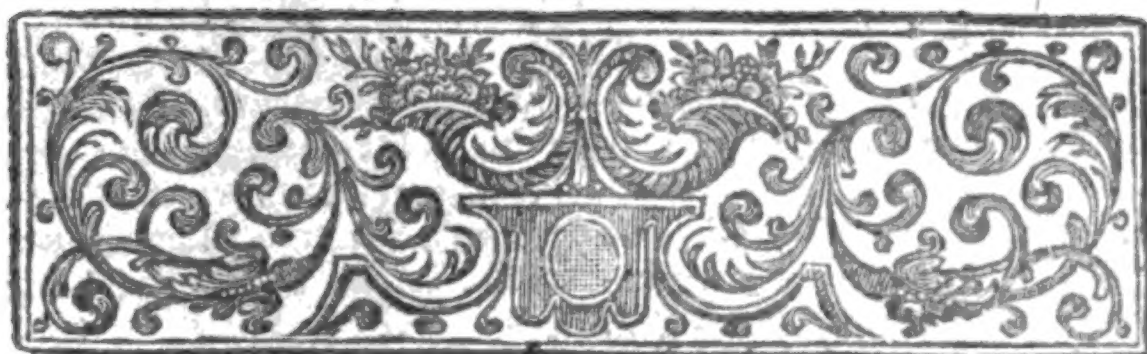
V O L. II.

L O N D O N :

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T H E Gardeners Dictionary.

V O L. II.

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ALI; Glasf-wort.

This is a Plant which grows very common in salt Marshes near the Sea, but is never cultivated in Gardens. The Ashes of this Plant are used in the Making of Glafs.

KETMIA; *Althaa frutex*, vulgô.

The Characters are ;

The Flower is compos'd of one intire Leaf, which expands in the Form of those of the common Mallow : The Fruit is oblong, and divided into several Cells, in each of which are contain'd several roundish Seeds.

The Species are ;

1. **KETMIA**; *Syrorum*, quibusdam. C. B. *Althaa frutex* with red Flowers.

2. **KETMIA**; *Syrorum*, flore purpureo-violaceo. Tourn. *Althaa frutex* with purple Flowers.

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3. **KETMIA**; *Syrorum*, flore albo. Boerb. Ind. *Althaa frutex* with white Flowers.

4. **KETMIA**; *Syrorum*, floribus ex albo & rubro variis. Tourn. *Althaa frutex* with strip'd Flowers.

5. **KETMIA**; *Syrorum*, foliis ex albo eleganter variegatis. Cat. Plant. Hort. Lond. *Althaa frutex* with strip'd Leaves.

6. **KETMIA**; *Sinensis*, fructu subrotundo, flore simplici. Tourn. China Rose; vulgô.

7. **KETMIA**; *Sinensis*, fructu subrotundo, flore pleno. Tourn. Double China Rose, commonly call'd in the West-Indies, Martinico Rose.

8. **KETMIA**; *Virginienfis*, folio inferiori ulmi, superiori aceris. Boerb. Ind. Virginian Ketmia with under-Leaves like the Elm, and upper-Leaves like Maple.

9. **KETMIA**; *Carolinienfis*, folio Ribesii, flore amplo, flavescente, fundo purpureo. Carolina Ketmia with

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Currant

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Current Leaves, and an ample yellowish Flower with a purple Bottom.

10. KETMIA; *Carolinensis*, folio oblongo, magis acuminato flore amplo, purpureo. Carolina Ketmia with a long sharp-pointed Leaf, and an ample purple Flower.

11. KETMIA; *Americana*, folio papaya, flore magno flavescente, fundo purpureo, fructu erecto, pyramidal, hexagono, semine rotundulo, sapore fatua. Boerb. Ind. American Ketmia with a papaw Leaf, and a large yellowish Flower with a purple Bottom, an hexagonal pyramidal Pod growing upright, and roundish Seeds.

12. KETMIA; *Indica*, vitis folio ampliore. Tourn. Indian Ketmia with an ample Vine Leaf.

13. KETMIA; *Aegyptiaca*, semine moschato. Tourn. Egyptian Ketmia with Seeds smelling like Musk, commonly call'd, in the West-Indies, Musk-Seed.

14. KETMIA; *Indica*, aculeata, foliis digitatis. Tourn. Indian Ketmia with rough-finger'd Leaves.

15. KETMIA; *Indica*, Gossypii folio, acetosa sapore. Tourn. Capsula seminalis rubra. Indian Ketmia with a Cotton Leaf, whose Fruit tastes like Sorrel, commonly call'd, in the West-Indies, Indian or Red Sorrel.

16. KETMIA; *Indica*, Gossypii folio, acetosa sapore, capsula seminalis albida. Indian Ketmia with a Cotton Leaf, and a whitish Seed-vessel, tasting like Sorrel, commonly call'd, White Sorrel.

17. KETMIA; *Brasilensis*, folio ficus, fructu pyramidato, sulcato. Tourn. Brasil Ketmia with a Fig-leaf, and a pyramidal furrow'd Fruit, commonly call'd, in the West-Indies, Okra.

18. KETMIA; *Indica*, folio ficus, fructu pentagono, recurvo, esculento

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graciliore & longiore. India Ketmia with a Fig-Leaf, and a five-corner'd, long, slender, eatable Fruit, recurv'd at the Top, commonly call'd, in the West-Indies, Long Okra.

19. KETMIA; *vesicaria vulgaris*. Tourn. Venice Mallow, or Bladder Ketmia.

20. KETMIA; *vesicaria*, *Africana*. Tourn. African Bladder Ketmia.

21. KETMIA; *Africana*, *vesicaria*, foliis profundius incis, vix crenatis. Boerb. Ind. African Bladder Ketmia with deeply-cut Leaves.

The five first Sorts are very hardy Shrubs, growing to the Height of seven or eight Feet, and may be train'd up to regular Heads: These are very great Ornaments in small Wilderness Quarters, when regularly dispos'd amongst Plants of the same Growth. They produce their Flowers in August; and, if the Autumn proves favourable, their Seeds will be ripe soon after Michaelmas. These are commonly sold by the Nursery-men, with other flowering Shrubs, under the Name of *Althea frutex*: but by the modern Botanists they are remov'd from that Genus, and call'd by the Name of *Ketmia*, because their Seeds are produc'd in Vessels; whereas those of *Althea* grow in Form of Cheeses, in the same Manner as those of the common Mallow.

These Plants are propagated by Seeds, which should be sown upon a Bed of rich light Earth in February or March: And when they come up, they should be constantly clear'd from Weeds; and in dry Weather often refresh'd with Water, which will forward their Growth. In these Beds they should remain until the succeeding Spring, when,

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when, in *March*, they must be carefully transplanted into Beds of the like Soil, at about ten Inches square each way, observing to water them in dry Weather, as also to keep them clear from Weeds: In these Beds they may continue two Years, by which Time they will spread so as to meet each other; therefore you must in *March* remove them either into the Places where they are design'd to remain, or into a Nursery, allowing them three Feet Distance Row from Row, and eighteen Inches asunder in the Rows; being careful, in taking them up, not to break or bruise their Roots, which would endanger their Growing; and in dry Weather give them some Water until they have taken Root; and lay some Mulch upon the Surface of the Ground, to prevent its drying too fast, and be careful to cut down the Weeds between them.

These Plants may also be propagated by Layers, or Suckers taken from the Roots of old Trees. But the latter Method is by no Means adviseable; because the Plants rais'd that way are seldom so well rooted, and are very subject to produce Suckers, whereby the Shrubs are render'd unsightly.

The former Method may be practis'd, in order to preserve the particular Kinds: but as they are so easily propagated by Seeds, which generally produce the handsomest Plants, and there will be a Chance to obtain different colour'd Flowers that Way, so it is generally preferr'd to any other Method. They will also take by Inarching, whereby the several colour'd Flowers may be obtain'd upon one and the same Tree; and by this Method, that Sort with variegated Leaves

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may be increased. These Shrubs require very little Culture, but only to clear them from Weeds, and to dig the Ground about them every *Spring*; and if there are any decay'd Branches, they may be at that Time cut out; but they will not require any other Pruning.

The sixth and seventh Sorts are tender, coming from a warmer Country: These may be propagated by Seeds, which should be sown on a Hot-bed in the Spring; and when they are come up, they should be transplanted into another moderate Hot-bed to bring them forward: After which, they must be planted into Pots fill'd with fresh light Earth, and plung'd into a Hot-bed, to encourage their Rooting; and in *June* they may be expos'd to the open Air in some Place where they may be defended from strong Winds: but they must be hous'd early in *Autumn*, when they should be plac'd in a warm Green-house, where they will endure the Winter very well without any artificial Warmth: Tho' indeed they will make but very little Progress in this Management, nor will they ever produce Flowers, unless they are in the succeeding *Spring* plac'd into a moderate Bark-bed in the Stove, where they will thrive exceedingly: And if a due Proportion of Air be given to them, that they may not draw up too fast, they will produce Flowers in the *Autumn*; but unless they have the Assistance of a Fire, they will scarcely ripen their Seeds in *England*.

These Plants were originally brought from *China*, where they are greatly admir'd, not only for their Beauty, but also for an odd Circumstance in their Flowers, which is, their changing Colour at different

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different Times of the same Day; in the Morning they are White, at Noon they are Red, and in the Evening Purple. These Flowers are in Shape somewhat like the *Holihock*, but seem to be of short Duration: The Double being much preferable to the Single, the Seeds of that should be constantly sow'd; for amongst the Plants produc'd from Seeds of the Double, there will always be Single Flowers produc'd; as is the Case of all Double Flowers which produce Seeds. They are known in the *West-Indies*, where they are now in great Plenty, by the Name of *Martinico Rose*; I suppose, because the Inhabitants of that Island first procur'd the Seeds; and from thence they have since been spread into most of the other Islands.

The eighth, ninth, and tenth Sorts are Perennial Plants, which die to the Surface every *Winter*, and rise again the succeeding *Spring*: They commonly produce their beautiful Flowers late in *Autumn*, but rarely perfect Seeds in our Climate. They are propagated by Seeds, which are easily procur'd from *Virginia* or *Carolina*, where they are in great Plenty. The Seeds should be sown in *March* upon a moderate Hot-bed; and when the Plants come up, they should be removed into small Pots fill'd with light rich Earth, and plung'd into another Hot-bed, to bring them forward: And in the Month of *June* they may be expos'd to the open Air, in a well-shelter'd Situation, where they may remain until *October*, when they must be remov'd into Shelter for the Winter-season: During which Time they will require no farther Care than to be protected from severe Frosts; so that if they are

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plac'd into a Hot-bed Frame, where they may be expos'd to the open Air in mild Weather, and only cover'd in Frosts, they will do better than when they are plac'd into the Green-house.

In the *Spring* they may be turn'd out of the Pots, and planted into the full Ground, under a warm Wall or Pale, where they will thrive much better than in Pots, and will produce their Flowers much larger, and in greater Quantities: Tho' if you would obtain Seeds from them, the only Method is, to keep one of each Sort in Pots, which should be plung'd into a very moderate Bark-bed in the Stove, giving them a great Share of Air; in which Place they will flower in *June*, and produce ripe Seeds in *Autumn*.

The 11th, 12th, 13th, 14th, 15th, 16th, 17th and 18th Sorts, are much tenderer than any of the former: These are all propagated by Seeds, which must be sown on a Hot-bed early in the *Spring*; and when the Plants are come up, they should be each of 'em transplanted into a separate small Pot fill'd with light fresh Earth, and plung'd on a fresh Hot-bed, where they should be frequently water'd, and in warm Weather the Glasses should be rais'd with Bricks, to admit fresh Air to them, which will prevent their drawing up weak; and when their Roots have fill'd the small Pots, they should be shaken out of 'em, and put into larger, and remov'd to a third Hot-bed, where they may remain until they are grown up to touch the Glasses; observing (as was before directed) to give them Water frequently, as also a large Share of Air in warm Weather; then you should put them into larger Pots, and

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and remove 'em into the Stove, where they will produce their Flowers in *July*, and in *August* their Seeds will ripen: But except they are thus manag'd, they will rarely produce either Seeds or Flowers in our Climate; tho' they may be kept alive in the Summer, if planted in the full Ground.

These Plants, tho' they may produce Seeds the first Year, yet may they be continu'd two or three Years, if preserv'd in a moderate Stove in Winter, and frequently refresh'd with Water: yet since they are easily rais'd from Seeds, and young Plants are much more slightly than the old ones; it is hardly worth while to fill a Stove with them, since there are so many other Sorts that will not flower or feed the first Year, which will take up all the Room there in Winter.

The Flowers of these Plants are very beautiful, but are of short Duration, seldom continuing longer than one Day; but they are succeeded by fresh Flowers, if the Plants are strong and healthy, otherwise there is little Pleasure in them in our Country: but in the *West-Indies*, where they grow in great Plenty, and often arise to the Height of a Shrub, they are more productive of Flowers, and are in great Esteem amongst the Inhabitants of those Countries.

The thirteenth Sort is by some People valu'd for the exceeding Sweetness of its Seeds; as are the fifteenth and sixteenth Sorts for their Seed-vessels, the Juice of which the People of *Barbados*, *Jamaica*, &c. make use of, to add a pleasant Tartness to their Viands. And the Pods of the seventeenth and eighteenth Sorts are by them put into their Soups to thicken

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them. For all which Purposes these Plants are much cultivated in those Countries; but with us they are preserv'd only as Curiosities.

The nineteenth, twentieth, and twenty-first Sorts, are annual Plants, which are propagated by sowing their Seeds in *March*, in the Places where they are design'd to remain; for they generally form downright Woody Roots, and seldom succeed well if transplanted, except it be done while the Plants are very young: They delight in a fresh light Soil, and an open Situation: for if they are over-shaded with Trees, they never thrive well, nor produce so great a Number of Flowers.

They are very proper Ornaments for the Borders of Pleasure-Gardens, where, being intermix'd with other annual Plants, they make an agreeable Variety, and are very hardy, requiring no other Culture than only to sow their Seeds, and keep them constantly clear from Weeds. They produce their Flowers in *June* and *July*, and their Seeds are perfected soon after; and tho' their Flowers are of short Duration, seldom continuing open above half a Day (which occasion'd *Gerard* in his *Herbal*, to call them *Flowers of an Hour*;) yet they are every Day succeeded by fresh Flowers until the Frost prevents them.

KITCHEN-GARDEN: The *Kitchen-Garden* should always be situated on one Side of the House, so as not to appear in Sight, but must be plac'd near the Stables for the Conveniency of Dung; which ought always to be consider'd in the Disposition of the Buildings, and the laying out of the Garden: for if this Garden be plac'd at a great Distance from the Stables, the Labour will be very great in wheeling

wheeling the Dung, and such Expences should ever be avoided, if possible.

As to the Figure of the Ground, that is of no great Moment, since in the Distribution of the Quarters all Irregularities may be hid, though, if you are at full Liberty, an exact Square is preferable to any other Figure.

The great Thing to be consider'd, is, to make Choice of a good Soil, not too wet, nor over dry, but of a middling Nature; nor should it be too strong or stubborn, but of a pliable Nature, and easy to work: And if the Place where you intend to make the *Kitchen-Garden* should not be level, but high in one Part and low in another, I would by no means advise the levelling it; for by this Situation you will have an Advantage which could not be obtain'd on a perfect Level, which is, the having one Part of dry Ground for early Crops, and the low Part for late Crops, whereby the Kitchen may be the better supply'd throughout the Season with the various Sorts of Herbs, Roots, &c. And in very dry Seasons, when in the upper Part of the Garden the Crops will greatly suffer with Drought, then the lower part will succeed, and so *vice versa*; but I would by no means direct the choosing a very low moist Part of Ground for this Purpose, for although in such Soils Garden-herbs are commonly more vigorous and large in the Summer-season, yet they are seldom so well tasted or wholesome as those which grow upon a moderate Soil: and especially since in this Garden your choice Fruits should be planted, so it would be wrong to have a very wet Soil.

This Garden should be fully expos'd to the Sun, and by no means overshadow'd with Trees, Buildings, &c. which are very injurious to your Kitchen-Plants and Fruit-Trees; but if it be defended from the North Wind by a distant Plantation, it will greatly preserve your early Crops in the Spring; as also from the strong South-West Winds, which are very hurtful in Autumn to Fruit and Garden-herbs.

The Quantity of Ground necessary for a *Kitchen-Garden* must be proportion'd to the Largeness of the Family, or the Quantity of Herbs desir'd: For a small Family, one Acre of Ground may be sufficient; But for a large Family, there should not be less than three or four Acres, because when the Ground is regularly laid out, and planted with *Espaliers* of Fruit-Trees, as will hereafter be directed, this Quantity will be found little enough, notwithstanding what some Persons have said on this Head.

This Ground must be walled round, and if it can be conveniently contriv'd so as to plant both Sides of the Walls, it will be a great Addition to the Quantity of Wall-Fruit. These Walls should be built about twelve Feet high, which will be a sufficient Height for any Sort of Fruit. If the Soil where you intend to place your *Kitchen-Garden* be very strong, then you should plow or dig it three or four times before you plant any thing therein; and if you throw it up in Ridges to receive the Frost in Winter, it will be of great Service to meliorate and loosen its Parts.

The Manure which is most proper for such Soils, is Sea-coal Ashes,

Ashes, and the Cleansing of Streets or Ditches, which will render it light much sooner than any other Dung or Manure, and the greater the Quantity of Ashes, the better, especially if the Ground be cold; and where these Ashes are not to be obtain'd in Plenty, Sea-sand is very proper, or rotten Wood; or the Parts of Vegetables rotted is very good; all which will greatly loosen the Soil, and cause it to be not only easier to work, but also more advantageous for the Growth of Plants.

But, on the contrary, if your Soil be light and warm, you should manure it with rotten Neats-Dung, which is much preferable to any other for hot Soils; but if you use Horse-Dung, it must be well rotted, otherwise it will burn up the Crops upon the first hot dry Weather.

The Soil of this Garden should be at least two Feet deep (but if deeper, it will be still better) otherwise there will not be Depth enough for many Sorts of esculent Roots, as *Carrots*, *Parsnips*, *Beets*, &c. which run down pretty deep in the Ground, and most other Sorts of esculent Plants delight in a deep Soil.

You should also endeavour to have a Supply of Water in the different Parts of this Garden, which, if possible, should be contain'd in large *Basins* or *Reservoirs*, where it may be expos'd to the open Air and Sun, that it may be soften'd thereby; for such Water as is taken out of Wells, &c. just as it is used, is by no means proper for any Sort of Plants.

In the Distribution of this Garden, after having built the Walls, you should lay out Banks or Borders under them, which should

be at least ten Feet broad, whereby the Roots of the Fruit-Trees will have greater Liberty than in such Places where the Borders are not above three or four Feet wide; and upon these Banks you may sow many Sorts of early Crops, if expos'd to the South; and upon those expos'd to the North, you may have some late Crops; but I would by no means advise the planting any Sort of deep-rooting Plants too near the Fruit-Trees; but rather to have some Reed Hedges fix'd in some of the warmest Quarters, under which you should sow and plant early *Peas*, *Beans*, &c. where they will thrive as well as if planted under a Wall, and hereby your Fruit-Trees will be intirely freed from such troublesome Plants.

Then you should proceed to dividing the Ground out into Quarters, which must be proportion'd to the Largeness of the Garden; but I would advise never to make them too small, whereby your Ground will be lost in Walks, and the Quarters being inclos'd by Espaliers of Fruit-Trees, the Plants therein will draw up slender, and never arrive to half the Size as they would do in a more open Exposure.

The Walks of this Garden should be also proportion'd to the Size of the Ground, which in a small Garden should be six Feet, but in a large one ten; and on each Side of the Walk should be allow'd a Border three or four Feet wide between the Espalier and the Walk, whereby the Distance between the Espaliers will be greater, and the Borders being kept constantly work'd and manur'd, will be of great Advantage to the Roots of the Trees: And in these Borders may be sown

some small Sallet, or any other Herbs, which do not continue long, or root too deep, so that the Ground will not be lost.

But the Walks of these Gardens should not be gravell'd; for as there will constantly be occasion to wheel Manure, Water, &c. upon them, so they would soon be defac'd and render'd unsightly; nor should they be laid with Turf, for Green Walks would absorb the Rays of Light too much, and thereby cause the Fruit to be ill-tasted: But on the contrary, only level the Surface of the Walks; and if you have either Lime-Rubbish, or Sand just to cover over the Tops of them, to render them drier or fitter to walk on than the natural Soil, they will be much preferable to any other Sort of Walks.

The best Figure for the Quarters to be dispos'd into, is a Square or an Oblong, where the Ground is adapted to such a Figure; otherwise they may be triangular, or of any other Shape which will be most advantageous to the Ground.

These Quarters should be constantly kept clear from Weeds; and when any Part of the Ground is unoccupied, it should always be trench'd up into Ridges, that it may sweeten and imbibe the nitrous Particles of the Air, which is of great Advantage to all Sorts of Land, and the Ground will then be ready to lay down whenever it is wanted.

The Ground in these Quarters should not be sown or planted with the same Crop two Years together, but the Crops should be annually chang'd, whereby they will prove much better than when they constantly grow upon the same Spot: Indeed the *Kitchen-*

Gardeners near London, where Land is dear, are often oblig'd to put the same Crop upon the Ground for two or three Years together; but then they dig and manure their Land so well every Year, as to render it almost new; tho' notwithstanding all this, it is constantly observ'd, that fresh Land always produces the best Crops.

In one of these Quarters, which is situated nearest to the Stables, and best defended from the cold Winds, should be the Place where you raise your early *Cucumbers* and *Melons*; for which Purpose 'twill be very proper to surround that Part with a Reed-Hedge, which will hide the Beds from Sight, and preserve them from Winds: The Size of this Place should also be proportion'd to the Quantity of Beds intended, but it should be large enough to contain two Years Beds, or else you should have two of these Places, that you may every Year change them, which will be found of great Advantage to your Plants: But if your Garden be too small to admit of this, then you should always prepare a sufficient Quantity of fresh Earth for these Beds, otherwise they will not succeed well.

The most important Points of general Culture consist in well digging and manuring the Soil, and giving a proper Distance to each Plant according to their different Growths (which is constantly exhibited in their several Articles in this Book) as also to keep them clear from Weeds; for if Weeds are permitted to grow until their Seeds are ripe, they will shed upon the Ground, and fill it so as not to be gotten out again in several Years: You should also observe to keep your Dung-hills always clear from

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from Weeds, for it will be to little Purpose to keep the Garden clean, if this is not observ'd; for the Seeds falling amongst the Dung will be brought into the Garden, whereby there will be a constant Supply of Weeds yearly introduc'd, to the no small Damage of your Plants, and a perpetual Labour occasion'd to extirpate them again. As for all other necessary Directions, they will be found in the Articles of the several Sorts of Kitchen-Garden Plants, which renders it needless to be repeated in this Place.

KNIGHT's CROSS, or SCARLET CROSS is the Scarlet Lychnis; *vide* Lychnis.



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L ABLAB; *vide* Phaseolus.

L ABRUM VENERIS; *vide* Dipſacus.

LABRUSCA; *vide* Vitis.

LABURNUM; *vide* Cytissus.

LACHRYMA JOBI; Job's Tears.

The Characters are;

It hath the whole Habit of a Reed; the Male Flowers (which have no Petals) are produc'd in a Spike on different Parts from the Female of the same Plant; the Ovary is a long Tube with two Horns, which becomes a hard, strong Fruit, containing one Seed.

This is a Sort of Corn which is often cultivated in Portugal, Italy, and some other warm Countries, where they string the Seeds (which are very smooth, and of a bright

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Ash-colour) for Beads; and in scarce Years of other Grain, I have been inform'd, the poorer Sort of People make Bread of it, but I do not find it is any where cultivated for that Purpose; the natural Place of its Growth is in *Candia*, and the other Islands of the *Archipelago*.

It is seldom cultivated in *England*, unless by way of Curiosity; and rarely produces ripe Seeds with us, except in very warm Seasons: The Seeds of this Plant should be sown upon a light Soil and in a warm Situation early in the Spring; and when the Plants are come up, they must be carefully transplanted to the Distance of ten Inches or a Foot each way, observing to water them until they have taken new Root; after which they will require no other Culture than to clear them from Weeds, and if the Season proves warm, they will perfect their Seeds in Autumn.

LACTUCA. Lettuce.

The Characters are;

It hath a fibrose Root, which is, for the most part, annual: The Leaves are smooth, and grow alternately upon the Branches, the Stalks are, for the most part, slender, and stiff, and do commonly terminate into a sort of Umbel; the Cup of the Flower is oblong, slender, and scaly; the Seeds are oblong, depress'd, and generally terminate in a Point.

It would be beside my Purpose to mention in this Place the several Sorts of Lettuce that are to be found in Botanick Writers, many of which are Plants of no Use, and are never cultivated but in Botanick Gardens for Variety, and some of them are found wild in many Parts of *England*; I shall therefore pass over those here, and only mention the several Sorts which are cultivated in the Kitchen-Garden for Use:

1. Common

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1. *Common or Garden Lettuce.*
2. *Cabbage Lettuce.* 3. *Silesia Lettuce.*
4. *Dutch Brown Lettuce.*
5. *Aleppo Lettuce.* 6. *Imperial Lettuce.*
7. *Green Capuchin Lettuce,*
8. *Versailles or Upright White Cos Lettuce.*
9. *Black Cos.* 10. *White Cos.*
11. *Red Capuchin Lettuce.*
12. *Roman Lettuce.* 13. *Prince Lettuce.*
14. *Royal Lettuce.*

The first of these Sorts is commonly sown in the Winter and Spring, for cutting very young, to mix with other small Sallet Herbs, and is only different from the second Sort, in being a Degeneracy therefrom, or otherwise the second is an Improvement by frequent Cultivation from the first; for if the Seeds are saved from such Plants of the second Sort as did not cabbage closely, the Plants produc'd from that Seed will all degenerate to the first Sort, which is by the Gardeners call'd *Laped Lettuce*, to distinguish it from the other, which they call *Cabbage Lettuce*. The Seeds of the first, which are commonly sav'd from any of the Plants, without having Regard to their Goodness, are generally sold at a very cheap Rate, (especially in dry Seasons, when these Plants always produce the greatest Quantity of Seeds); tho' sometimes this Seed is sold in the Seed-shops, and by Persons who make a Trade of selling Seeds, for the *Cabbage Lettuce*, which is often the Occasion of Peoples being disappointed in their Crop: So that this Sort should never be cultivated but to be cut up very young, for which Purpose this is the only good Sort, and may be sown any Time of the Year, observing only in hot Weather to sow it on shady Borders, and in the Spring and Autumn upon warm Borders; but in Winter it should

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be sown under Glasses, otherwise it is subject to be destroy'd by severe Frosts.

The *Cabbage Lettuce* may also be sown at different Times of the Year, in order to have a Continuation of it thro' the whole Season; the first Crop is generally sown in *February*, which should be upon an open warm Spot of Ground, and when the Plants are come up, they should be thin'd out, to the Distance of ten Inches each Way, which may be done by hoeing them out, as is practis'd for *Turnips*, *Carrots*, *Onions*, &c. provided you have no Occasion for the superfluous Plants, otherwise they may be drawn up and transplanted into another Spot of good Ground at the same Distance, which if done before the Plants are too large, they will succeed very well, though they will not be so large as those which were left upon the Spot where they were sown; but they will come somewhat later, which will be of Service, where People do not continue sowing every Month.

You must also observe in sowing the succeeding Crops, as the Season advances, to chuse a shady moist Situation; but not under the Drip of Trees, otherwise in the Heat of Summer, they will run up to Seed before they cabbage: In the beginning of *August*, you should sow the last Crop, which is to stand over Winter, and should be sown thin, upon a good light Soil, in a warm Situation, and when the Plants are come up, they must be hoed out so as to stand singly, and cut down all the Weeds to clear them; and the Beginning of *October* they should be transplanted into warm Borders, where, if the Winter is not very severe, they will stand very well; but in order to be

be sure of a Crop, it will be advisable to plant a few upon a Bed pretty close, where they may be arched over with Hoops, and in severe Frosts they should be cover'd with Mats and Straw, or Pease-haulm, to secure them from being destroy'd, and in the Spring of the Year they may be transplanted out into a warm rich Soil, at the Distance before-mention'd; but still those which grew under the Wall, if they escap'd the Winter, and were suffer'd to remain, will cabbage sooner than those which are remov'd, but you must observe not to place them too close to the Wall, which would occasion their growing up tall, and prevent their being large or hard.

In order to save good Seeds of this Kind, you should look over your *Lettuces* when they are in Perfection, and such of them as are very hard and grow low, should have Sticks thrust into the Ground, by the Sides of as many of them as you intend for Seed, to mark them from the rest, and you should carefully pull up all the rest from amongst them as soon as they begin to run up, if any happen to be left, left by intermixing with the good ones, the Seeds may degenerate.

It may be some Persons may object, that suppose some bad ones should happen to be left among them (for Seeds to sow for small Sallets) yet the good ones being mark'd, the Seeds need not be mix'd, and so no Danger can ensue from thence; but notwithstanding ever so much Care being taken to keep the Seeds separate, yet, whether from the intermixing of the *Farina* during the Time of their being in Flower, or what other Cause, I can't say, but it hath been often observ'd, that where good

and bad Plants have seeded upon the same Spot, the Seeds of the good Plants which were carefully saved separately, have very much degenerated, and proved worse than such as have seeded by themselves: The Seeds should always be saved either from those which stood through the Winter, or those which were sown early in the Spring, for the late ones very seldom perfect their Seeds.

The *Silesia*, *Imperial*, *Royal*, *Black*, *White* and *Upright Cos Lettuces* may be sown at the following Times: The first Season for sowing these Seeds, is at the latter End of *February*, or the Beginning of *March*, upon a warm light Soil, and an open Situation, *i. e.* not over-shadowed with Trees, and when the Plants are come up, they should be either hoed out or transplanted into another Spot of Ground, (as was directed for the *Cabbage Lettuce*) observing to leave these Sorts fifteen or sixteen Inches apart each Way, which will be full near enough for these Plants, especially if the Soil be good, and you must carefully keep them clear from Weeds, which is the only Culture they will require, except the *Black* and *White Cos Lettuce*, which should be tied up when they are full grown (in the Manner as was directed for blanching of *Endive*) to whiten their inner Leaves, and render them crisp, otherwise they are seldom good for much, rarely cabbaging without this Assistance.

When your *Lettuces* are in Perfection, you should look over them, and mark as many of the best of them as you intend for Seed, (in the same Manner as was before directed for the common *Cabbage Lettuce*) being very careful not to suffer any ordinary ones to seed amongst

amongst them, as was before observ'd, which would prove more injurious to these Sorts than to the common, as being more inclinable to degenerate with us, if they are not carefully preserved.

You may also continue these Sorts through the Season, by sowing of them in *April*, *May* and *June*, observing (as was before directed) to sow the late Crops in a moist, shady Situation, otherwise they will run up to Seed before they grow to any Size; but in *August*, toward the latter End, you may sow of these Sorts to abide the Winter, which Plants should be transplanted either under Glasses, or into a Bed which should be arched over with Hoops, in order to be cover'd in the Winter, otherwise in hard Winters they are often destroyed; but you must constantly let these Plants have as much open free Air as possible when the Weather is mild, only covering them in hard Rains or frosty Weather; for if they are kept too closely cover'd in Winter, they will be subject to a Mouldiness, which soon rots them.

In the Spring these Plants should be planted out into a rich light Soil, allowing them at least eighteen Inches Distance each Way; for if they are planted too close, they are very subject to grow tall; but seldom cabbage well: And from this Crop, if they succeed well, it will be proper to save your Seeds, tho' you should also save from that Crop sown in the Spring, because sometimes it happens that the first may fail by a wet Season, when the Plants are full in Flower, and the second Crop may succeed, by having a more favourable Season, and if they should both succeed, there will be no harm in that, since the Seeds

will grow very well when two Years old, and if well saved at three; but this will not always happen.

The most valuable of all the Sorts of *Lettuces* in *England* are the *Versailles*, the *Silesia*, and *Cos*, tho' some People are very fond of the *Royal* and *Imperial Lettuces*; but they seldom sell so well in the *London* Markets as the other, nor are so generally esteem'd.

The *Brown Dutch* and *Green Capuchin Lettuces* are very hardy, and may be sown at the same Seasons as was directed for the common *Cabbage Lettuce*; and are very proper to plant under a Wall or Hedge to stand the Winter, where many times these will abide, when most of the other Sorts are destroy'd, and therefore they will prove very acceptable at a Time when few other Sorts are to be had; they will also endure more Heat and Drought than most other Sorts of *Lettuce*, which renders them very proper for late sowing, for it often happens in very hot Weather, that the other Sorts of *Lettuce* will run up to Seed in a few Days after they are cabbag'd, whereas these will abide a Fortnight or three Weeks in good Order, especially if Care be taken to cut the forwardest first, leaving those that are not so hard cabbag'd to the last. In saving of these Seeds the same Care should be taken to preserve only such as are very large and well cabbaged, otherwise the Seeds will degenerate, and be good for little.

The *Red Capuchin*, *Roman* and *Prince Lettuces* are pretty Varieties, and are very early Cabbagers, for which Reason a few of them may be preserv'd; as may also some of the *Aleppo*, for the Beauty of its spotted Leaves; tho' very few People

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People care for either of these Sorts at Table, when the other more valuable ones are to be obtain'd; but in a Scarcity, these may supply the Place pretty well. The Seeds of these must also be saved from such as cabbage best, otherwise they will degenerate, and be good for little.

In saving Seeds of all these Sorts of *Lettuce*, you should observe, when the Plants have run up, to fix a Stake down by the Sides of each, to which the Stem should be fasten'd, to prevent their being broke, or blown out of the Ground by Wind, to which the *Silesia* and the other large-growing *Lettuces* are very subject when they are in Flower. You must also observe to cut such Branches of the large-growing *Lettuces* as ripen first, and not wait to have the Seed of the whole Plant ripe together, which never happens, but, on the contrary, some Branches will be ripe a Fortnight or three Weeks before others; and when you cut them, they must be spread upon a coarse Cloth in a dry Place, that the Seeds may dry; after which, you should beat 'em out; and dry 'em again, and then preserve them for Use, being careful to hang 'em up where Mice and other Vermin can't come at 'em; for if they do, they will soon eat them up.

LACTUCA AGNINI; *vide* Valerianella.

LADY's SLIPPER; *vide* Helleborine.

LADY's SMOCK; *vide* Cardamine.

LAGOPUS; *vide* Trifolium.

LAMIUM; Archangel, or Dead-Nettle.

There are great Varieties of these Plants, which are preserv'd in curious Botanick Gardens, many of which grow wild in divers Parts of

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England; but being of little Beauty, they are rarely cultivated in any other Gardens; for which Reason, I shall not trouble the Reader with any farther Account of them.

LAMPSANA. Nipplewort.

This is also a very common Plant upon the Sides of dry Banks in most Parts of England.

LAPATHUM. The Dock.

The Characters are;

The Cup of the Flower consists of six Leaves, three of which are large, and of a red Colour; the other three are lesser, and green: In the middle of the Cup are plac'd six Stamina: The three outer small Leaves of the Cup fall away when ripe; but the three inner large Leaves join together, and form a triangular Covering, in the Middle of which are contain'd shining three-corner'd Seeds.

There are great Varieties of these Plants, which are preserv'd in some Gardens, to increase the Number of their Plants: but as many of them are very common in England, and, if transplanted into a good Garden, and permitted to scatter their Seeds, do become very troublesome Weeds; so I shall only name two or three of the most valuable Sorts in this Place.

1. LAPATHUM; *praestantissimum, Rhabarbarum officinarum dictum.* Mor. Hist. The Pontick Rhubarb.

2. LAPATHUM; *Alpinum, folio subrotundo.* Mor. Hist. Round-leav'd Alpine Dock, by some call'd, Monk's Rhubarb.

3. LAPATHUM; *hortense, folio oblongo, sive secundum Dioscoridis.* C. B. P. Long-leav'd Garden Dock, or Patience.

The first of these Plants is by some suppos'd to be the true *Rhabarbar*. But that does not appear, from the Figure and Consistence of the Roots, which in this Plant, however

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however cultivated with us, is not of the same Colour; nor has it such a Resin as is found in the true; and the Shape of the Roots appear very different, as is also the Strength in Medicine: so that until the true Rhubarb is better known, there can be little said with Certainty on this Head.

The second Sort is sometimes cultivated in Gardens, for Medicinal Use; tho' there is a Dispute whether this be the true *Monks Rhubarb* or not: but there is no great Difference between the Roots of this Plant, and the other disputed Sort; so that either may be indifferently us'd.

The third Sort was formerly cultivated in Gardens as a Pot-herb; but of late Years it has been wholly disus'd for that Purpose, and now only preserv'd in Gardens for Medicinal Use.

These Plants are all easily propagated by sowing their Seeds in Autumn, soon after they are ripe, or early the succeeding Spring, in a rich, light, moist Soil, where they will grow to be very large, and, if singled out to the Distance of three Feet, will produce large strong Roots, which will be fit for Use the second Year after sowing; when they should be taken up soon after the Leaves are decay'd, and dry'd in a shady Place where the Air may freely pass between them.

LARIX; The Larch Tree.

The Characters are;

The Leaves (which are long and narrow) are produc'd out of little Tubercles,, in Form of a Painter's Pencil, (as in the Cedar of Libanus) but fall off in Winter. The Cones are small and oblong, and (for the most part) have a small Branch growing out of the Top; these are produc'd at remote Distances from

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the Male Flowers on the same Tree: The Male Flowers are (for the most part) produc'd on the underside of the Branches, and, at their first Appearance, are very like small Cones.

The Species are;

1. LARIX; folio deciduo, conifera. f. B. The Larch Tree.

2. LARIX; folio deciduo, rudimentis Conorum candidissimis. Pluk. Alm. Larch Tree, with white Rudiments.

The first of these Trees is now pretty common in *English* Gardens: This is a Native of the *Alps* and *Pyreanean* Mountains, but thrives exceeding well here, especially if it be planted upon an elevated Situation; as may be observ'd by those which were planted a few Years since at *Wimbleton* in *Surrey*, which are now grown to be large Trees, and produce annually a large Quantity of Cones.

The second Sort seems to be only a seminal Variety from the first, from which it differs in the Colour of the Rudiments of the Cone, which in this is White, but in the other, of a bright Red Colour; as also in the Colour of the Leaves, which in this Sort are a somewhat lighter Green than those of the other; nor do the Trees of this Kind seem to be so vigorous: But whether the Seeds of this Kind will produce the same, I can't as yet say, having never seen any of the Plants which were rais'd from these Seeds produce any Flowers; but however, it may be obtain'd by Inarching it into the Common Sort.

These Trees are propagated by Seeds, which should be sown in the Beginning of *March*, upon a Bed of light Soil, expos'd only to the Morning Sun: Or otherwise, it may be sown in Pots or Boxes of light

light Earth, and plac'd under a Hedge where they may have the Morning Sun only. The Seeds should be cover'd about half an Inch thick, with fine light Earth, and in very dry Weather should be gently refresh'd with Water. In about six Weeks, if your Seeds were good, the Plants will come up, at which Time you should carefully guard them against the rapacious Birds, who would otherwise pull off the Heads of the Plants, as they thrust themselves out of the Ground with their Covers on them; and observe to refresh them with Water in dry Weather, especially if they are sown in Pots or Boxes, as also to keep them constantly clear from Weeds, which, if suffer'd to grow among the young Plants, will soon destroy them: nor should they be too much expos'd to the Sun, or strong Winds, both which are very injurious to these Plants while they are young. But in *October* you should (if they are in Boxes or Pots) remove them into a Situation where they may be defended from sharp Winds, which are sometimes hurtful to 'em while young; but afterwards they will endure the severest Weather of our Climate.

The Latter-end of *March*, or Beginning of *April* following, you should remove these Plants into Beds of light fresh Earth, at about ten Inches Distance each Way, observing to water them, if the Season should prove dry, as also to lay a little Mulch upon the Surface of the Ground, to prevent the Sun and Winds from drying their Roots: In these Beds they may remain two Years, during which Time you should carefully keep them clear from Weeds; as also observe, if any of 'em incline their Heads downward, to thrust a small Stake into

the Ground by such of them, and fasten their Heads upright thereto; for if they are suffer'd to grow on one-side while young, they are rarely to be reduc'd to an upright Figure again.

When the Plants have remain'd in these Beds two Years, they will be fit to transplant into the Nursery; in order to which, you should make choice of a Piece of fresh light Earth not over-dry, nor too wet: This Ground should be well dug, and cleans'd from Weeds, and Roots of Plants or Trees; and, after having laid it level, you should mark out the Rows at three Feet Distance; then you should take up the Plants carefully, preserving a good Ball of Earth to their Roots, and plant them in the Lines at eighteen Inches asunder, observing to mulch their Roots, and also to water them, to preserve their Roots from drying. The best Season for this Work is toward the Latter-end of *March*, or Beginning of *April*, just before the Plants begin to shoot; for if they are remov'd sooner, they seldom succeed so well. During the Time they remain in this Nursery, they must constantly be kept clean from Weeds; and the Ground between them should be dug every Spring, that it may be loose for the Fibres of their Roots to strike into; and the Weeds will be hereby more effectually destroy'd than by any other Method: And the Roots of the Plants being annually cut round, will cause 'em to push out a greater Number of Fibres, whereby they will be much safer to remove than they would be if permitted to grow undisturb'd for several Years.

You must also observe to train their Heads upright, and not suffer them to grow awry, which they are naturally too much inclin'd to:

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to: But I would by no means advise the Sheering them into Pyramids, (as is too often practis'd) but rather lead 'em up for Timber Trees; for they will grow to a considerable Size, provided they like the Soil they are planted in.

In removing these Trees from the Nursery to the Places where they are design'd to be continu'd, you should always observe to do it just before they shoot out in the Spring, as also to take them up with a large Ball of Earth to their Roots; and when planted, the Ground should be mulch'd, and the Plants stak'd, to prevent the Wind from loosening them, or blowing 'em out of the Ground. These Directions, if duly executed, will be sufficient, and there will be no Danger of not succeeding. But the chief Cause why many of these Trees have fail'd, upon their being remov'd, was, the not doing it in a proper Season, or else that they were not carefully taken up.

These Trees are very proper for the Sides of barren Hills, where few other Sorts will thrive so well; and during the Summer they appear very beautiful; but in Autumn they cast their Leaves, whereby some People have been deceiv'd, by supposing 'em dead, and have destroy'd 'em.

From the wounded Bark of this Tree exsudes the purest *Venice Turpentine*; and on the Body and Branches of it grows the *Agaric*, which is a Drug us'd in Medicine: And the Wood is very durable, and (by some) reported to be very difficult to burn. But I don't know how this should be, to a Tree which abounds with Turpentine; tho' it is said also to be so ponderous as to sink in Water. It will polish exceeding well, and is by

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the Architects abroad much coveted, both for Houses and Building of Ships. *Witsen*, a Dutch Writer upon *Naval Architecture*, mentions a Ship to be long since found in the *Numidian Sea*, twelve Fathoms under Water, being chiefly built of this Timber and *Cypress*, both which Woods were reduc'd to that hardness, as to resist the sharpest Tools; nor was any Part of it perish'd, tho' it had lain above a Thousand Years submerg'd. And it was upon Tables of this Wood that *Raphael* and several of the greatest Artists eterniz'd their Skill, before the Use of Canvas was introduced.

LARK SPUR; *vide* Delphinium.

LASERPITIUM. Laser-wort.

This is a Kind of Umbelliferous Plant, of which there are several Sorts preserv'd in curious Botanick Gardens: But as they are Plants of little Beauty or Use in England, I shall omit mentioning them in this Place.

LATHYRUS; Chichling Vetch.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, cover'd with a membranaceous Sheath, which afterwards becomes a Pod, sometimes round, sometimes cylindrical, and at other times angular; to which may be added, it hath a compress'd Stalk, with a rais'd Rib, and a leafy Border; and has only one Pair of Leaves, growing on the Nerves, which terminates in a Tendril.

The Species are;

1. LATHYRUS; *latifolius*. C. B. Broad-leav'd or Common Everlasting Peas.

2. LATHYRUS; *latifolius, minor, flore majore*. Boerb. Ind. Lesser Broad-leav'd Everlasting Peas, with a large Flower.

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3. LATHYRUS; *major*, *Narbonensis*, *angustifolius*. C. B. Greater Narrow-leav'd Everlasting Peas.

4. LATHYRUS; *arvensis*, *repens*, *tuberosus*. C. B. Creeping Chichling, or Peas Earth-Nut, with a Tuberosc Root.

5. LATHYRUS; *Tingitanus*, *siliquis Orobis*, *flore amplo ruberrimo*. Mor. Hist. Tangier Chichling, with a large deep-red Flower.

6. LATHYRUS; *distoplatiphyllus*, *hirsutus*, *mollis*, *magno & peramano*, *flore odoro*. Hort. Cath. Broad-leav'd, hairy soft Chichling, with a large and very beautiful purple sweet-smelling Flower, commonly call'd, Sweet-scented Peas.

There are several other Varieties of this Plant, which are preserv'd in curious Botanick Gardens as Curiosities; but these here mention'd being the most valu'd for their beautiful Flowers, I shall omit the others, as they are seldom cultivated for Use or Beauty.

The three first Sorts are abiding Plants, which send forth strong downright Roots very deep into the Earth; for which Reason they should not be often remov'd, which would prevent their growing strong, or producing many Flowers.

They are propagated by Seeds, which should be sown the Beginning of *March*, upon a Bed of light fresh Earth, covering them about half an Inch deep. But the best Method is, to make a shallow Drill in the Ground, and then drop the Seeds therein about six Inches Distance; these Drills should be a Foot asunder, for the Conveniency of hoeing and cleaning the Ground between them; which must constantly be done, otherwise the Weeds will over-bear and destroy them: but they will require no farther Care, being very hardy

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Plants, until the Spring following, at which Time, (*viz.* in *March*) just before they begin to shoot, the Roots should be carefully taken up, and transplanted where they are to continue, placing them at least two Feet asunder, otherwise they will over-run each other, or whatever other Plants stand near them. If the Season should prove dry, you must give them some Water, to settle the Earth to their Roots; which should be now-and-then repeated, if it continue dry Weather, until the Plants have taken Root: after which, they'll require no farther Culture but to keep them clear from Weeds, and in the Summer-time to support them with strong Stakes, otherwise they'll trail upon the Ground and rot the Branches, and destroy whatever Plants grow near them.

These Plants are very proper to plant against a dead Hedge, where they will run over it, and if they be kept train'd up, will cover it in the Summer, and in such Places they will produce great Quantities of Flowers; but if they are planted in a Flower-Garden, they must have a great deal of Room, and in Summer should have very strong Stakes plac'd down by them, to which they must be closely fasten'd, otherwise they will ramble and trail upon the Ground, and appear very unsightly: for if the Ground be good in which they are planted, and the Roots are very strong, they will sometimes grow eight or ten Feet high in a Season, and produce abundance of Flowers, which are very ornamental in Basons or Pots of Flowers, to place in Chimnies or other Parts of large Rooms. These produce their Flowers in *June* and *July*, and their Seeds are perfected in *August*, their green

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Leaves

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Leaves decay in *Autumn*, and rise again the succeeding *Spring*, their Roots continuing good for many Years: They delight most in a light Soil, not too dry nor over wet, but will grow in almost any Soil or Situation, but best in that which is expos'd to the Sun.

The first Sort is most commonly cultivated in the *English* Gardens, but the second is much preferable to that, as being of humbler Growth, never rising above five Feet high, and so is more proper for Flower-Gardens, and the Flowers are much larger, and of a deeper red Colour, and commonly are produc'd in larger Clusters. The third Sort is seldom propagated in Flower-Gardens, tho' for Variety it should have a Place amongst other large Plants. The Flowers of this Kind are smaller, and of a purple Colour.

The tuberosc-rooted Sort is preserv'd as a Curiosity in many Gardens, tho' there is no great Beauty in its Flowers. This may be propagated either by Seeds, as the others, or by its Roots, which increase very fast under-ground, and is an abiding Plant, but should not be plac'd amongst other curious Flowers, for the Roots propagating under-ground, will come up and spread over whatever Plants grow near them.

The fifth and sixth Sorts are annual Plants, which are propagated only by Seeds: These may be sown in *March*, in the Places where they are to remain for good, being Plants that seldom will grow if transplanted; except it be done while they are very young: These should be either sown near a Pale, Wall, or Espalier, to which they may be train'd; or if sown in the open Borders, should have Stakes plac'd

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by them, to which they should be fasten'd, otherwise they will trail upon the Ground and appear very unsightly, which is the only Culture these Plants require, except the clearing them from Weeds: They produce their Flowers in *July*, and their Seeds are perfected in *August* and *September*.

But the best Method to have them very strong, is, to sow their Seeds in *August*, under a warm Wall or Hedge, where they will come up in *Autumn*, and abide the Winter very well; and these will begin to flower in *May*, and continue to produce fresh Flowers until *July* or later, according to the Heat of the Season: and one of these autumnal Plants will be as large as four or five of those sown in the Spring, and produce ten times the Number of Flowers; and upon these Plants you'll always have good Seeds, when sometimes the other will miscarry: However, 'tis very proper to sow their Seeds at two or three different Seasons, in order to continue their Flowers the longer, for the late planted ones will continue blowing until the Frost prevents them.

The sweet-scented Sort is the most valuable, both for the Beauty and Fragrancy of its Flowers.

LAVATERA.

The Characters are;

The Leaf, Flower, Style, and Cup of the Flower, have the Appearance of a Mallow: The Stile becomes a Fruit which is arm'd in Front with a hollow Shield: The Seeds, which are shap'd like a Kidney, growing to the inner Part.

The Species are;

1. LAVATERA; folio & facie *Altheae*. Town. Lavatera, with the Leaf and Face of Marsh-mallow.

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2. LAVATERA; *folio & facie Althææ, flore albo*, Lavatera, with the Leaf and Face of Marshmallow, and a white Flower.

3. LAVATERA; *Africana, flore pulcherrimo*. Boerh. Ind. African Lavatera, with a most beautiful Flower.

These are all annual Plants, which are propagated by Seeds: The Season for sowing 'em is in *March*, upon a Bed of fresh light Earth; and when the Plants are come up, you must carefully clear them from Weeds; and in very dry Weather they must be now-and-then refresh'd with Water. When they are about two Inches high, you must transplant them into the Places where they are design'd to remain, which should be in the Middle of the Borders in the Flower-Garden, for if the Soil be good, they will grow two or three Feet high: In transplanting them, you must take 'em up very carefully, preserving a Ball of Earth to their Roots, otherwise they are apt to miscarry: And also water and shade them until they have taken Root; after which they will require no other Care but to clear them from Weeds, and to fasten them to Stakes to prevent their being injur'd by strong Winds. You may also sow their Seeds in Autumn; and when the Plants are come up, you should transplant them into small Pots, which, towards the End of *October*, should be plac'd into a common Hot-bed Frame, where the Plants being defended from severe Frosts, will abide the Winter very well; and in the Spring you may shake them out of the Pots, and plant them into larger, or else into the full Ground, where they may remain to flower: The Plants thus manag'd, will be

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larger, and flower stronger and earlier than those sown in the Spring. and from these you will constantly have good Seeds; whereas those sown in the Spring do sometimes miscarry.

These produce their Flowers in *June, July* and *August*, and their Seeds ripen soon after.

They are very ornamental Plants in a fine Garden, when plac'd among other Annuals, either in Pots or Borders; their Flowers are very like those of the *Mallow*, but are larger and of a more beautiful Colour.

LAVENDULA; Lavender.

The Characters are;

It is one of the verticillate Plants, whose Flower consists of one Leaf, which is divided into two Lips; the Upper-lip standing upright, is roundish, and for the most Part bifid; but the Under-lip is cut into three Segments, which are almost equal: These Flowers are dispos'd in Whorles, and are collected into a slender Spike upon the Top of the Stalks.

The Species are;

1. LAVENDULA; *latifolia*. C. B. Common broad-leav'd Lavender.

2. LAVENDULA; *angustifolia*. C. B. Common narrow-leav'd Lavender commonly call'd Spike Lavender.

3. LAVENDULA; *latifolia, sterilis*. Mort. Hist. Broad-leav'd barren Lavender.

4. LAVENDULA; *angustifolia, flore albo*. C. B. P. Narrow-leav'd Lavender, with white Flowers.

5. LAVENDULA; *folio dissecto*. C. B. Cut-leav'd Lavender.

6. LAVENDULA; *folio dissecto, flore albo*. Boerh. Ind. Cut-leav'd Lavender, with a white Flower.

7. LAVENDULA; *folio longiori tenuius & elegantius dissecto*. Tourn. Lavender with a longer and more beautiful

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beautiful fine cut *Leat*, commonly call'd, *Canary Lavender*.

The first of these *Species*, tho' very common in most Parts of *Europe*, yet in *England* is rarely to be found, notwithstanding it is as easily propagated as any of the other Sorts.

The second is the most common Sort in the *English* Gardens, being propagated for medicinal Uses, &c.

The third Sort is a Degeneracy from the second, having much broader and greener Leaves, but rarely ever flowers while it continues with the Leaves broad; but whenever it flowers, the Leaves of that Part of the Plant become narrow again.

The fourth Sort is also a Variety of the second, from which it differs in the Colour of the Flowers, which in this Sort are white, and those of the second are blue.

These are all propagated by Cuttings or Slips; the best Season for which is in *March*, when you should plant them in a shady Situation, or at least shade them with Mats until they have taken Root; after which they may be expos'd to the Sun, and when they have obtain'd Strength, may be remov'd to the Places where they are design'd to remain: These Plants will abide the longest in a dry, gravelly, or stony Soil, in which they will endure our severest Winters, tho' they will grow much faster in the Summer, if they are planted upon a rich, light, moist Soil, but then they are generally destroy'd in Winter; nor are the Plants half so strong scented, or fit for medicinal Uses as those which grow upon the most barren, rocky Soil.

The first and second Sorts may also be propagated from Seeds,

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which should be sown in *March*, upon a dry undung'd Soil; and when the Plants are come up, they must be carefully clear'd from Weeds, until they are about two Inches high, when they should be transplanted into other Beds, allowing them a Foot Distance each Way: In these Beds they may remain, to be cut for Use; or you may afterwards transplant them into dry Borders or Beds, in any other Place where you would have them stand, observing never to dung the Ground where they are planted, which would cause them to grow vigorously in Summer, but will hasten their Decay, as was before observ'd.

These Plants were formerly in use to make Edgings to Borders in Gardens; for which Purpose they are by no means proper: for they will grow too large for such Designs; and if they are often cut in very dry Weather, they are subject to decay, and in hard Winters they are very often kill'd, so that the Edging will not be compleat; besides, these Plants do greatly exhaust the Goodness of the Soil, whereby the Plants in the Borders will be depriv'd of their Nourishment; so that they should never be planted in a fine Garden amongst other choice Plants or Flowers, but rather be plac'd in Beds in the Physick-Garden: These Plants produce their Flowers in *June* and *July*, at which Time they should be gather'd and dry'd in a shady Place, and preserv'd dry for Use.

The fifth, sixth and seventh Sorts, are commonly sown every *Spring*, on Borders or Beds of light, fresh Earth; and when the Plants come up, they may be transplanted into other Borders of the Flower-Garden,

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den, or into Pots, to remain for good, where they will produce their Flowers in *July* and *August*, and their Seeds are ripe soon after. These are pretty Plants to place in large Borders amongst other Plants for Variety, but they are never us'd with us: They may also be preserv'd over the Winter, if plac'd into a Green-house in *Autumn*, which is the surest Method to obtain good Seeds from the seventh Sort, which rarely ripens Seeds the first Year; but they seldom continue longer than two Years with us, and many Times (if they have produc'd Seeds the first Year) they will not continue longer. These Plants will sometimes grow from Cuttings, but then the Cuttings must be strong and inclinable to be woody, for if they are very soft and spongy, they seldom succeed; and they should also be plac'd upon a moderate Hot-bed, which will greatly promote their taking Root. This Method is sometimes necessary to preserve the Sorts which might otherwise be in Danger of being lost.

LAUREOLA; *vide* Thymelea.

LAUROCERASUS; The Laurel or Cherry-Bay.

The Characters are;

It hath broad, thick, shining, ever-green Leaves, somewhat like those of the Bay-Tree: The Cup of the Flower is hollow and Funnel-shap'd, spreading open at the Top, and is divided into five Parts: The Flower consists of five Leaves, which expand in Form of a Rose, having many Stamina in the Center: The Fruit (which are like those of the Cherry-Tree) are produc'd in Bunches, and the Stone is longer and narrower than that of the Cherry.

The Species are;

1. LAUROCERASUS; *Clus. Hist.*

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The common Laurel or Cherry-Bay.

2. LAUROCERASUS; *foliis ex albo variegatis. Cat. Plant. Angl.* The White-strip'd Laurel.

3. LAUROCERASUS; *foliis ex luteo variegatis. Cat. Plant. Angl.* The Yellow-strip'd Laurel.

4. LAUROCERASUS; *Lusitanica, minor. Tourn.* The Dwarf Portugal Laurel, call'd Asarero.

The first Sort is very common in most *English* Gardens, and was formerly in greater Request than it is at present, when these Trees were planted against North-walls to cover them; as also in the Parterre-Garden, where they were frequently sheer'd up to form Pyramids and Globes, for which Purpose, this was one of the most improper Trees; for the Leaves being very large, they were cut in divers Places by the Sheers, which render'd them unsightly: But though this Plant is very improper for such Uses, yet it is valuable for planting upon the Sides of cold barren Hills, where it will grow to a large Magnitude, and make a fine Appearance through the whole Year, and in such Situations it will rise to a large Tree.

They are easily propagated by planting Cuttings in *July*, in a shady, moist Border, where they will soon take Root; and in the *Spring* following may be remov'd into the Nursery, planting them three Feet distance Row from Row, and two Feet asunder in the Rows, observing to clear them from Weeds, and to dig the Ground annually between the Rows, and prune off their under Branches, to make them aspire in Height; and when they have remain'd in this Place three Years, they will be fit to transplant into the Places where they

they are to continue. The best Season for transplanting these Trees is in *April*, just before they begin to shoot; but in taking them up, you must always observe to preserve a Ball of Earth to their Roots: and when they are planted, you must mulch the Ground round their Stems to preserve it from drying, and refresh them often with Water (especially if the Season be dry) until they have taken Root, after which, they will require but very little Culture.

But if you design these Trees for large Standards, the best Method is to propagate them from the Berries, which will easily rise, and will sooner grow to large Trees than those propagated by Cuttings. The Manner of sowing these Seeds is as follows; You should dig and prepare a Bed or two (according to the Quantity of Seeds you have to sow) and level the Ground very even; then sow the Berries thereon soon after they are ripe, covering them over about an Inch thick with light Earth: In the *Spring* the young Plants will appear; at which Time you must carefully clear them from Weeds, and in dry Weather often refresh them with Water, which will greatly promote their Growth: these Plants (if they have made a good Progress) will be fit to transplant the succeeding *Spring*; when you must prepare some fresh Beds, into which they should be remov'd, planting them ten Inches or a Foot asunder each way, observing to water them, and lay a little Mulch about their Roots: In these Beds they may continue two Years; after which they should be remov'd either into the Places where they are to remain, or in a Nursery, as was before directed.

There are some People, who advise the Budding of this Tree upon the common Black-Cherry-Stock, in order to render it more vigorous; but as I have never yet seen any large Trees which were thus rais'd, so I can't say how well it will succeed, though I have often seen the *Cherry* grafted on this Tree, and this grafted upon the *Cherry*, both which have taken very well; but I much doubt whether they will join so well together, as to add to the Stature of the Tree, especially since we find that most Sorts of Fruit-Trees grow much larger when they are suffer'd to remain ungrafted as they come from Seeds, than those which are budded or grafted.

The Berries of this Tree are by some put into Brandy to make *Ratafia*, for which Purpose it is greatly prefer'd to *Apricock* Stones, giving the Brandy a much pleasanter bitter Taste, and by some the Leaves are us'd for the same Purpose; but this should be cautiously done, since, by some late Accounts from *Ireland*, we are inform'd, that the distill'd Water of these Leaves is found to be poisonous. Which Account has been since confirmed by several Experiments, which have been made in *London*.

These Berries are much coveted by divers Sorts of Birds, for which Reason some of the Trees should be planted in the Clumps, where you intend a Shelter for Birds to harbour, and their Leaves remaining always green, will be of great Use to these Inhabitants in Winter; so that such Plantations will be well stor'd with *Black-birds*, *Thrushes*, and many other Sorts of Singing-Birds, to the no small Pleasure of such Places.

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The two variegated Kinds may be propagated by Cuttings, or by budding or grafting them on the plain Sort; but these must constantly be planted on a poor Soil, otherwise they will become plain again. These are pretty Varieties amongst other variegated Plants.

The *Portugal Dwarf Laurel* is somewhat tenderer than the common Sort, and is subject to be injur'd by severe Frosts, but will endure our ordinary Winters abroad very well. This is propagated in the same Manner as the common Sort, but will not grow near so large; however, it is very proper to intermix with Evergreens of middling Growth, where, if it be planted on a dry Soil, and has a warm Situation, it will stand the Test of our Winters very well.

LAURUS; The Bay-Tree.

The Characters are;

It hath a Flower consisting of one Leaf, which is shap'd like a Tunnel, and divided into four or five Segments, the Male Flowers (which are produc'd on separate Trees from the Female) have eight Stamina, which are branched into Arms; the Ovary of the Female Flowers becomes a Berry, inclosing a single Seed within a horny Shell, which is cover'd with a Skin.

The Species are;

1. LAURUS; *vulgaris*. C. B. The common Bay, with Male Flowers.

2. LAURUS; *vulgaris*, *Fœmina*. Boerh. Ind. The common Fruit-bearing Bay-Tree.

3. LAURUS; *vulgaris*, *folio elegantissimè variegato aureo*. Boerh. Ind. The Gold-strip'd Bay-Tree; *vulgò*.

4. LAURUS; *vulgaris*, *folio undulato*. H. R. Par. The common Bay-Tree, with waved Leaves, and Male Flowers.

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5. LAURUS; *vulgaris folio undulato, fœmina*. Boerh. Ind. The Berry-bearing Bay-Tree, with waved Leaves.

6. LAURUS; *tenuifolia*. Tab. Icon. Mas. The Narrow-leav'd Bay, with Male Flowers.

7. LAURUS; *tenuifolia, Fœmina*. Boerh. Ind. The Narrow-leav'd Berry-bearing Bay-Tree.

8. LAURUS; *latiori folio*. Lugd. Mas. The Broad-leav'd Bay-Tree, with Male Flowers.

9. LAURUS; *latifolia, Fœmina*. Boerh. Ind. The Broad-leav'd Berry-bearing Bay-Tree.

10. LAURUS; *Indica*. Hort. Farnes. Ald. The Broad-leav'd Indian Bay-Tree, commonly call'd Wild Cinnamon.

The first and second Sorts are old Inhabitants of the *English Gardens*; and as they are Varieties obtained from the same Seeds, so they are promiscuously cultivated, and are not to be distinguished asunder until they have produc'd Flowers.

These Plants are propagated either from Seeds, or by laying down the tender Branches, which will take Root in one Year's Time, and may then be taken off, and transplanted either into a Nursery, or the Places where they are design'd to remain. But if you would propagate them from Seeds, you must gather them from the Trees in *January* (at which Time they commonly are ripe) and preserve them in Sand until the Beginning of *March*, when you must prepare a Bed of light, dry Earth, which should be situated in a warm Place where the Plants may be defended from the North and East Winds: This Bed be levell'd exactly even, and then draw some small Furrows cross it at about eight Inches Di-

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stance, and an Inch deep, into which you should drop the Seeds about two Inches asunder, then cover them with Earth; and if the Season should prove very dry, you must often refresh them with Water. In about two Months Time the young Plants will appear above-ground, when you must carefully clear them from Weeds; and in dry Weather if you refresh them with Water, it will greatly promote their Growth: In these Beds they should continue two Years, by which Time they will be large enough to transplant; you must therefore make Choice of a warm dry Spot of Ground, which should be well dug and cleans'd from Weeds and Roots of Trees, &c. and laid even; then mark out the Lines three Feet distant from each other; and having taken up the Plants carefully with a Ball of Earth to their Roots, you must plant them exactly strait in the Rows, at eighteen Inches asunder, observing to water them well, as also to lay some Mulch upon the Surface of the Ground, near the Stems, to preserve the Ground from drying too fast. The best Season for removing these Trees is in *April*, just before they begin to shoot.

During the Time these Plants remain in the Nursery, you must observe to keep them clear from Weeds, digging the Ground between the Rows every *Spring*; as also to fasten the Shoots of the Plants to strait Stakes, to prevent their growing crooked and unsightly; and also observe to prune off the Under-shoots, to make them advance in Height: But I can by no Means recommend the sheering of these Plants into conical or pyramidal Figures (as is the general

Practice) for the same Reason as I gave for the *Laurel*, viz. that the Leaves being large, are cut in Pieces, whereby the Plants are render'd very unsightly; but rather, that they should be improved, so as to make large Trees, to which they are naturally dispos'd to grow, could we prevent the Sheers from perpetually gnawing them.

These Trees are very proper to plant upon the warm Sides of dry Hills, where they may be protected from the severe Blasts of the North and East Winds; in which Situations I have seen some of these Trees upward of thirty Feet in Height, which is a plain Indication of their large Growth.

But I know it will be objected, that these Trees are often destroy'd by hard Winters, and so are improper to make large Plantations of in *England*. That they have been sometimes kill'd by severe Winters, I can't deny: but if they are brought up thus hardily, as has been directed, and not sheer'd, I dare affirm they will resist the severest Cold of our Climate, when grown to a moderate Age, provided they are planted in a dry Soil, in which tho' their Leaves should be entirely shrivell'd by extreme Cold, yet, if permitted to remain undisturb'd, they will shoot again in the succeeding Summer, as I have more than once experienc'd. And in the hard Winter, *Anno* 1728, when most of the *Bay-Trees* seem'd to be destroy'd which grew abroad, and many People were so inconsiderate as to dig them up and throw them away, it was observable, that all those which were permitted to stand, did shoot out again in the succeeding Summer, and recover'd their usual Verdure. Which should cau-
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tion every Person, not to be over-hasty in condemning Trees to the Fire, but to wait for the Success of a whole Season, before they are pull'd up.

Bay-Leaves dry'd and reduc'd to Powder, as much as will cover an Half-Crown, being drank in a Glass of White-Wine, are said seldom to fail of curing an Ague: These Leaves are also used in divers Sauces in the Kitchen, and the Berries are often used in Medicine.

The Gold-strip'd *Bay* is much more tender than the common Sort; for which Reason it must be planted in Pots, and hous'd in Winter with *Oranges*, *Myrtles*, &c. and must be plac'd so as to have as much free Air in mild Weather as possible, and will require to be frequently water'd. This Plant may be propagated by Layers, or by Budding it upon the Common *Bay*: but you must not plant it into very rich Earth, which will cause it to grow vigorously, whereby it will become quite plain; but, on the contrary, let it have a fresh light sandy Soil, in which it will very well preserve its beautiful Stripe.

The 4th, 5th, 6th, 7th, 8th and 9th Sorts are commonly preserv'd in Pots or Tubs, and plac'd in the Green-house with *Oranges*, *Myrtles*, &c. But I dare say, either of these Sorts will thrive in the open Air, if planted in a warm dry Soil, and defended from the North and East Winds; but especially the Broad-leav'd Sort, which I have experienc'd, will endure more Cold than the common *Bay*. But as they are less common, so they are generally preserv'd with more Care; tho' they may either of them be propagated in as great Plenty as the common Sort, either by Layers or Seeds; for they will bear great Plenty of

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Berries, provided they are not kept sheer'd; and these Berries will rise full as well, and, many times, out-grow the common *Bay*, as I have frequently observ'd: so that why we have not these Trees in as great Plenty as the common Sort, is only owing to their not being propagated and planted abroad; most People imagining, because they have been hitherto treated with great Care, that therefore they will not endure the Cold. Which is a great Mistake; for we have found, by repeated Trials which have been made within a few Years past, that many of those Plants which had been nurs'd up in Green-houses, with great Care (whereby their Roots were confin'd, and the Plants circumscrib'd and starv'd in their Growth) when planted abroad, have made great Progress, and defy'd the most severe Cold of our Climate to injure them: Which is a great Encouragement to proceed in our Trials of this Kind; since, by this Method, we may naturalize a great Variety of valuable Trees and Plants to our Country, which may hereafter be found of great Benefit. Nor should we be discourag'd, if, in the first Attempt, we should not succeed so well as we might wish; for, by several Essays, we may overcome the Difficulty; and then the Pleasure of having Denizen'd any Exotick Trees, will sufficiently compensate the Trouble, since hereby we establish living Monuments of Praise.

The *Indian Bay* is too tender to endure our Cold Winters abroad as yet: Though I doubt not but that when these Plants are very strong and woody, and some Care taken in their first Exposure, they may be brought to thrive in the open Air; which, if once obtain'd, so as to have

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have Seeds produc'd in *England*, the Off-spring will be better inured to our Climate. And if this Plant can be once well naturalized, so as to grow as in the warmer Parts of *Europe*, it will be one of the noblest Ever-greens, for Shade and Beauty, we ever obtain'd; for it is naturally a very strait-growing Tree, and the Leaves are very broad, and of a shining green Colour, which renders it very agreeable.

This Plant is propagated by Seeds, (which are easily procur'd from *Portugal*, where these Trees grow in great Plenty) they should be put into Pots fill'd with fresh light Earth, and plung'd into a gentle Hot-bed, to facilitate their Growth; and when the Plants are come up, you should remove the Pots into another moderate Hot-bed, to forward them, where they should remain until the Beginning of *June*, when you must harden them by degrees, to endure the open Air, into which they should be remov'd about the Middle of that Month, observing to place the Pots in a well-shelter'd Situation, and in dry Weather you must often refresh them with Water. The Beginning of *October* you must remove the Pots into the Green-house, placing them near the Windows, that the Plants may have as much free Air as possible in mild Weather; and observe that they do not suffer with Drought, for they will require to be frequently refresh'd with Water. In *April* following you must take the Plants out of the Pots, preserving the Earth to their Roots, and put each into a separate Pot fill'd with the before-mention'd fresh light Earth: Then plunge them into a moderate Hot-bed for a Month or six Weeks, to hasten their taking Root; which done, you must harden them again,

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and expose them to the open Air, as before: And in Winter they must be hous'd again, observing the Directions before given. After five or six Years thus managing them, (still observing every Year to let them continue longer out of the House in Autumn, than the preceeding), you should in *April* plant some of them into the full Ground, in a warm well-shelter'd Situation, that they may have good Rooting in the Ground before the Winter comes on: And in *Autumn* you must lay a little Mulch upon the Surface of the Ground, to prevent the Frost from penetrating to their Roots. But if the Winter following should prove severe, you should twist a Band of Hay or Straw round their Stems, which will be of great Service to protect them from Cold: And after they have endured two or three Winters abroad, they will be pretty much out of Danger; for tho' a very hard Winter may afterwards kill some of their Branches, yet they will shoot again the following Summer.

LAURUS ALEXANDRINA; *vide* Ruscus.

LAURUS TINUS; *vide* Tinus.

LAWN, is a great Plain in a Park, or a spacious Plain adjoining to a noble Seat.

As to the Dimensions of it, it should be as large as the Ground will permit; but never less, if possible, than thirty or forty Acres.

As to the Situation of a *Lawn*, it will be best to be in the Front of the House, and to lie open to the neighbouring Country, and not pent up with Trees.


If the House front the East, it will be most convenient, because the Rooms will be shaded in the Afternoon, and so the Objects to be view'd from the House will be much

much beautify'd by the Sun's shining upon them in the Afternoon: For if the best Room of the House front the *Lawn*, as it always should do, the Afternoon being the most usual Time for People of Fashion to solace themselves in such Rooms, then the Afternoon Sun will not be offensive to those Rooms; nor will the Prospect be interrupted, but render'd more pleasant: whereas, were it on the West Side of the House, the Sun by shining from the Object, and directly against those Rooms, would by both hinder the Prospect; and the Generality of Prospects are most pleasant when the Sun shines upon them.

Besides, there is another Inconveniency; if the *Lawn* be on the West Side of the House, it will give the more way to the West Wind (which is commonly the greatest) to injure the House, by its having a free Passage to it.

If the *Lawn* be on the South Side of the House, it may do well enough, for the Reasons before-mention'd; for the Sun's Rays being then darted obliquely, will not much interrupt the Prospect; and the Sun shining most part of the Day on that Side of the House, will still add to the Beauty of that Front, which ought to be the best Front in the House; therefore a *Lawn* on that Side will much help the Prospect of the House.

It will not be at all convenient to have the *Lawn* on the North Side of the House, because it will lay the House too open to the Cold North Winds, &c. therefore it will be more eligible to plant Wildernesses and Woods on the West and North Sides of the House.

If the Figure of the House be built in this Form, , or any other, the Front may be on both Sides the

House alike, making an Angle at the Middle of the Front, or at some Court Gate right before it, and breaking off at a convenient Distance from the House.

As to the Figure of a *Lawn*, the Square is a very proper one, and if it be bounded with Walks it may not be much amiss, though I rather recommend an open *Lawn*; but if Persons chuse to have it bounded, a single Row of Elm Trees set at a good Distance one from another, will not look amiss, and being so placed, they will the better shew the Shape of their Heads, but however, the Front of the *Lawn* should be left open, except the *Lawn* fall very much from the House.

If Persons will, there may be three Avenues breaking out at three Angles; or one at the Angle opposite to the House, and if the *Lawn* be a rising Ground to the House, some Trees set thin upon it will not look unpleasant. If the *Lawn* be a Circle, it may not be amiss; but then it ought to break off before it comes against the Front.

Neither is a Triangle a very improper Figure for a *Lawn*, but if so, the Angle which leads to the Front must not be too acute; but it should rather be obtuse or right-angled, at the Angle that is next to the Front.

If the *Lawn* be bounded with Trees, Lime Trees are very proper for that Purpose, because they are Trees that will grow well in any Soil, if Care be taken in the Planting of them; and besides that, all the Trees will grow in a very fine Shape, appearing as though they were cut, if they are not too thick planted, and you will have a Prospect of the adjoining Country between their Stems, especially if their

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their Heads are pruned up to a reasonable Height; but if that Part of the Country upon which you look is not agreeable, then you should bound the View with a rising Plantation of Trees, formed into an Amphitheatre, which will be very agreeable.

The Elm is a very proper Tree for planting of *Lawns*, having a fine green Leaf, and if the Ground be natural to it, it will grow to a large Tree and strait, if it be still kept pruned as it ought to be.

The Beech makes a stately Tree where it likes the Ground, also the Chesnut, the Walnut and the Black-Cherry Tree, for where they like the Ground, they are not only quick Growers, but represent a very delightful Scene in the Spring, when cloath'd in their white Attire.

Firs and Pines do very well, if the Ground be suitable to them, and these being always Green, afford a constant Pleasure both in Winter and Summer.

LAYERS: Many Trees may be propagated by *Layers*, the Evergreens about *Bartholomew-tide*, and other Trees about the Month of *February*.

This is to be performed by flitting the Branches a little way, and laying them under the Mould about half a Foot; the Ground should first be made very light, and after they are laid, they should have a little Water given them.

If they do not comply well in the laying of them down, they must be pegg'd down with a Hook or two, and if they have taken sufficient Root by the next Winter, they must be cut off from the main Plants, and planted in the Nursery, as is directed about Seedlings.

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Some twist the Branch or bare the Rind, and if it be out of the Reach of the Ground, they fasten a Tub or Basket near the Branch, which they fill with good Mould, and lay the Branch in it.

Laying of Trees.

This Operation is thus performed.

1st, Take some of the Boughs and lay them into the Ground about half a Foot deep in fine fresh Mould, leaving them with the End of the *Layer* about a Foot, or Foot and a half out of the Ground, and keep them moist during the Summer-season; and they will probably have taken, and be fit to remove by Autumn: and if they have not by that Time taken Root, they must lie longer.

2dly, Tie a Piece of Wire hard round the Bark of the Bough, at the Place you intend to lay in the Ground, and twist the Ends of the Wire, so that they may not untie, and prick the Place above the Wire through the Bark with an Awl in several Places, and then lay it into the Ground, as before directed.

3dly, Cut a Slit upwards at a Joint, as is practis'd in laying of *Carnations*, which by Gardeners is called *Tonguing the Layers*.

4thly, Twist the Place that you design to lay in the Ground like a Withy, and lay it into the Ground as directed in the first Way of Laying.

5thly, Cut a Place round about the Bough (that is design'd to be laid) an Inch or two, at the Place that is most convenient to lay into the Ground, and manage it as is directed in the first Method of Laying.

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The Season for laying Hardy Trees that shed their Leaves, is in *October*; but for such as are tender, in *March*, for Ever-greens, *June* or *August* are good Seasons.

Though *Layers* may be laid at any Time in the Year, yet those Seasons before-mention'd are most proper, for the Reasons following; because they have the whole Winter and Summer to prepare and draw Root; for at these Times of the Year the Sun has sufficient Power on the Sap of the Tree to feed the Leaf and Bud; but has not Power sufficient to make a Shoot.

And if that small Quantity of Sap that does arise be hindred, as it will by some of the preceding Ways of *Laying*, the Leaves and Buds will gently crave of the *Layer*, and by that Means will prepare the *Layer* to take Root, or put forth Roots a little to maintain itself, finding it cannot have it from the Mother-Plant.

And therefore, because it wants but little Nourishment at that Time of the Year, it is better to lay *Layers* of Trees, or to set *Cuttings*, than at other Times, either in the Winter when the Sap stirs but little, or in the Summer when the Sap abounds, or in the Spring when it begins to rise, because it is then apt to come too suddenly to draw Sap from the *Layer*, before the *Layer* has drawn or prepared for Root.

However the Spring or Summer may do well for small Plants, because such Plants being but short-liv'd, draw Root the quicker.

If you would lay young Trees from an high Standard, the Boughs of which cannot be bent down to the Ground, then you must make use of Ozier-Baskets, Boxes or Pots, filled with fine sifted Mould, mix'd with a little rotten Willow-dust,

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which will keep Moisture to assist the *Layer* in taking Root: This Basket, Box, &c. must be set upon a Post or Tressel, &c. and the Bough must be laid according to either of the four first Ways of *Laying*; but too much Head must not be left on, lest that be injured by the Wind, or by its own Motion rub off the the tender Root; and the smaller the Boughs are, the less Way they should be set out of the Ground, and Care must be taken to keep them clear from Weeds.

The harder the Wood is, the better will the young Wood take Root; but if the Wood be soft, the older Boughs will take Root the best.

LEAVES are defined to be a Part of a Plant extended into Length and Breadth, in such a Manner as to have one Side distinguishable from the other; they are properly the most extreme Part of a Branch, and the Ornament of the Twigs, and consist of a very glutinous Matter, being furnished every where with Veins and Nerves; one of their Offices is to subtilize and give more Spirit to the Abundance of nourishing Sap, and to convey it to the little Buds.

LEEKs; *vide* Porrum.

LEMON-TREE; *vide* Limon.

LENS; Lentils.

The Characters are;

It hath a papilionaceous Flower; the Pointal of which becomes a short Pod, containing orbicular Seeds, which are, for the most Part, convex; to which may be added, the Leaves are conjugated, growing to one Midrib, and are terminated by Tendrils.

The Species are;

1. LENS; *vulgaris*. C. B. P. Common Lentils.

2. LENS; *major*. C. B. P. Greater Lentils.

3. LENS;

3. LENS; *monanthos*. H. L. Lentils, with a single Flower.

There are several Varieties of the first and second Sorts, which differ from each other in the Colour of their Flowers and Fruits; but these are accidental, and will often arise from the same Seeds, for which Reason they are not worth observing in this Place.

These Plants are very common in the warm Parts of Europe, and in the Archipelago, where they are the Food of the poorer Sort of People, which they loath when they meet with better Fare; from whence came the Proverb, *Dives factus jam desit gaudere Lente*: which is apply'd to such as spurn at those Things in easy Circumstances, which they were glad of in a low Condition.

These Plants are one of the least of the Pulse Kind, and call'd in some Places *Tills*: They may be propagated in the same Manner as *Vetches*, &c. but must be sown a great deal thinner: They will grow upon a dry barren Soil best, and are a very good Fodder for Cattle; but as they require an annual Culture, so they are not at present very much esteem'd: Their Seeds are very good for Pigeons.

LENS PALUSTRIS; Duck-Meat. This is a very common Plant, growing upon standing Waters in most Parts of England.

LENTISCUS; The Mastick-Tree.

The Characters are;

The Leaves are pinnated; the Lobes growing opposite, and are fasten'd to one common Mid-rib; the Male Flowers, which are produced upon separate Trees from the Fruit, have short, green, quadrifid Cups, which expand in Form of Stars, having four or five short Stamina,

with large red Apices: These Flowers are collected into a Bunch: The Ovary, in the Female Plants, which grows upon the Top of a long, thick Foot-stalk, is commonly branch'd, and becomes a Fruit which contains a Nut with a hard Shell.

The Species are;

1. LENTISCUS; *vulgaris*. C. B. P. Common Mastick-Tree.

2. LENTISCUS; *vulgaris*, *foliis minoribus & pallidioribus*. H. L. The Male Mastick-Tree, with lesser and paler Leaves.

These two Plants are promiscuously preserv'd in many curious Gardens in England, where they are commonly kept in Pots and Tubs, and hous'd in the Winter, with Oranges, Myrtles, &c. but in some Places, which are well defended from cold Winds, I have observ'd them growing in the open Air, without suffering the least Injury from our ordinary Winters; but in extreme hard Weather they are sometimes greatly damag'd; however, as they are seldom quite destroy'd, especially if the Plants are strong, and have taken good Root in the Ground, so it is worth our Care to endeavour to naturalize them to our Climate: which may easily be effected, provided you keep them in Pots, until they have acquir'd a sufficient Strength, and then shake them out in the Spring of the Year, preserving as much of the Earth to their Roots as you can, planting them on a dry warm Soil, and in a well-shelter'd Situation, and in Winter lay some Mulch upon the Surface of the Ground about their Roots, to prevent the Frost from penetrating to them, as also in very severe Frosts you should cover their Stems and Heads with some Straw or Peas Haulm, which will prevent

vent their being destroy'd, and after they have been inured to the open Air for two or three Years, they will then be mostly out of Danger, and will grow much better than those Plants, which are kept in Pots or Tubs.

These Plants are propagated by laying down their young Branches in the Spring, which should be slit at a Joint (as is practis'd in laying *Carnations*) and in dry Weather they must be frequently watered to encourage their striking Root, which they rarely do until the second Year, before which they should not be disturb'd; but then if they have taken sufficient Root, they should be transplanted in *April*, placing them, as was before directed, into a warm Situation, observing to water them in dry Weather, as also to lay some Mulch about their Roots to prevent the Ground from drying too fast; and in Winter lay a little fresh Mulch about them to keep out the Frost; after two or three Years, they will be sufficiently hardy, and will require no farther Care, but to dig the Ground about them every Spring, and keep them clean from Weeds, as also to trim up the lateral Branches, to make them aspire in Height; but by no Means should you shear them into Balls and Pyramids (as is the common Practice) but let them grow in their utmost Luxuriancy, in which Manner they will appear much more beautiful than in those studied Figures.

These Plants may also be propagated from the Berries, which may be obtained from the Southern Parts of *France* or *Spain*, where they grow in great Plenty; they must be sown in Pots or Tubs of light fresh Earth, and housed in

Winter (for the Plants seldom come up until the second Year) but in Summer they should be exposed in a warm Situation, and often refresh'd with Water; when the Plants come up they must be carefully clear'd from Weeds, and refresh'd with Water in dry Weather, and in Winter the Pots or Tubs must be removed into Shelter, but should have a great Share of free Air in mild Weather; and the *Spring* following the Plants should be taken up, and each of them planted into a separate Pot, then plunge the Pots into a moderate Hot-bed to facilitate their taking Root, after which they may be expos'd to the open Air (as was directed for the older Plants) and continue to house them every Winter, until they are three or four Years old, after which they may be planted into the open Air, when they must be treated as the old Plants.

These Trees are always Green, which renders them more valuable, and their Leaves being of a beautiful Figure, and their Heads generally growing very regular, renders them worthy of a good Situation; they seldom rise above twelve or fourteen Feet high with us, and should therefore be intermix'd with other Ever-greens of the same Growth.

LEONTOPETALON; Lion-Leaf.

The Characters are;

It hath a thick tuberose perennial Root; the Flower is naked, and consists of five or six Petals which expand in Form of a Rose, garnish'd with five Stamina; in the Middle of the Flower rises the Pointal, which afterwards becomes a Bladder, containing many spherical Seeds.

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We have but one Species of this Plant in the *English* Gardens, which is,

LEONTOPETALON; *foliis costa ramosa innascentibus. Flor.* Lion-leaf, with Leaves growing on a branched Rib.

This Plant is found in great Plenty in the Islands of the *Archipelago*, and also in some Parts of *Italy*, but at present is very rare in *England*; it may be propagated by sowing the Seeds, or parting of the Roots; but the former is the best Method, if the Seeds could be obtained from Abroad; for they seldom produce good Seeds in *England*, nor do they increase very fast by their Roots.

The Seed of this Plant should be sown soon after it is ripe, in Pots or Tubs fill'd with fresh light Earth, that the Plants may be removed into Shelter in the Winter, for if they are expos'd at that Season (which is the Time they do arise) the Cold will destroy them; but in the *Summer* they should be set abroad, where they may have the Morning Sun until Ten of the Clock, and when the Plants are strong enough to be transplanted, they should be each of them put into a separate Pot, and in *Winter* placed into a Hot-bed Frame, where they may be shelter'd in severe Frosts; but in mild Weather they should be expos'd to the open Air.

When the Plants are two Years old, they may be taken out of the Pots and planted into a warm Border under a South Wall, where they will endure the Cold of our ordinary Winters very well, being seldom hurt by severe Frosts, or too much Wet; for which Reason they should always be planted in a dry Soil.

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The best Season for transplanting these Roots is in *May*, when their Leaves are decay'd; for if you defer it till *July* or *August*, they will be striking out new Fibres, when they will not be so safely removed: They produce their Flowers in Winter, for which they are chiefly valued.

LEONURUS; Lion's-Tail.

The Characters are;

It is one of the verticillate Plants with a lip Flower, which consists of one Leaf, whose Galea or Crest is imbricated, and much longer than the under Lip, which is divided into three Segments; out of the Flower-cup rises the Pointal fix'd like a Nail to the hinder Part of the Flower, surrounded by four Embryo's, which afterwards turn to so many Seeds, which are oblong, and enclosed in a long fistulous Husk, which before was the Flower-cup.

The Species are;

1. LEONURUS; *perennis, Africanus, sideritidis folio, flore phœnicio majore. Breyn. prod.* Perennial African Lion's-Tail, with an Ironwort Leaf, and a large scarlet Flower.

2. LEONURUS; *perennis, Africanus, sideritidis folio, variegato, flore phœnicio majore.* Perennial African Lion-Tail, with a variegated Ironwort Leaf, and a large scarlet Flower.

3. LEONURUS; *minor, Capitis Bone Spei vulgò. Boerb. Ind.* Lesser Lion's-tail from the Cape of Good Hope, with a Cat-mint Leaf.

These Plants are very great Ornaments in a Green-house, producing large Tufts of beautiful scarlet Flowers in the Months of *October* and *November*, when few other Plants are in Perfection, for which Reason a good Green-house should never

never be wanting of these Plants, especially since they require no artificial Heat, but only to be preserved from hard Frosts, so that they may be placed amongst *Oranges, Myrtles, Oleanders, &c.* in such a Manner, as not to be too much over-shaded with other Plants; but that they may enjoy as much free Air as possible in mild Weather.

They are easily propagated by planting Cuttings of any of the Sorts, in Pots fill'd with light Earth, any Time in *July* or *August*, observing to shade and water them until they have taken Root, after which they must be each of 'em planted into a separate Pot fill'd with light rich Earth, and often refresh'd with Water (for it is an Aquatick Plant in its native Country) and in *October* they must be removed into the Green-house; but in *May*, they should be expos'd again to the open Air, placing them where they may have the Morning Sun till Eleven of the Clock, observing never to let them want Water, which will encourage them to produce strong Tufts of Flowers in *Autumn*.

These Plants will grow to be eight or nine Feet high, and abide many Years; but are very subject to grow irregular, therefore their Branches should be pruned early in the *Spring*, in order to reduce them to a tolerable Figure; but they will not bear to be often pruned or shear'd, nor can they ever be form'd into Balls or Pyramids, for if they are often shorten'd, it will prevent their flowering.

The strip'd Sort is by many People valued for the Variety of its Leaves; but as that is occasion'd by a Weakness in the Plant, so the Flowers of that Sort are never so large and fair, as are those of the

plain Sort, nor produced in so great a Quantity.

The third Sort is also preserved for Variety more than its Beauty; the Flowers of this being much smaller, and not so well colour'd, as are those of the common Sorts.

LETTUCE; *vide* *Lactuca*.

LEUCANTHEMUM; Ox-eye Daizy.

The Characters are;

It agrees in every respect with the *Chrysanthemum*, except in the Colour of its Semi-florets, which in these are constantly White.

The Species are;

1. LEUCANTHEMUM; *vulgare* Tourn. Common Ox-eye Daizy.

2. LEUCANTHEMUM; *Alpinum, majus, rigido folio*. Tourn. Greater Ox-eye Daizy of the Alps, with stiff Leaves.

3. LEUCANTHEMUM; *radice repente, foliis lasioribus serratis*. Tourn. Creeping-rooted Ox-eye Daizy, with broad serrated Leaves.

4. LEUCANTHEMUM; *folio absinthii, Alpinum, Ciasfi*. Alpine Ox-eye Daizy, with a Wormwood Leaf.

5. LEUCANTHEMUM; *tanacetifolio, flore majore*. Boerh. Ind. Ox-eye Daizy, with a Tansy Leaf and a large Flower.

6. LEUCANTHEMUM; *Canariense, foliis Chrysanthemi, sapore pyrethri*. Tourn. Canary Ox-eye Daizy, with a *Chrysanthemum* Leaf, and a Taste like *Pellitory of Spain*, vulgarly called *Pellitory of Spain*.

The first of these Plants is very common in the Meadows, in most Parts of *England*, from whence the Flowers are gathered and brought into the Markets of *London* for medicinal Uses, but it is seldom cultivated in Gardens.

The second and fifth Sorts are many Times planted in Gardens for their Beauty; these produce large

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large Tufts of white radiated Flowers upon the Summits of their Stalks, which continue a long Time in Beauty; they commonly grow two Feet high or more, for which Reason they should always be placed in the Middle of large Borders, and require to be planted at a good Distance from other Plants, otherwise they will over-bear them; so that they are not very proper for small Gardens, taking up too much Room.

These are very hardy Plants, and may be propagated either by sowing their Seeds, or parting their Roots; the best Time for sowing of their Seeds, is in *March*, upon a Border of light fresh Earth, and when the Plants are come up pretty strong, they must be transplanted into fresh Borders of the like Earth, placing them at eight Inches Distance each Way; in these Borders they may remain till *Michaelmas*, when they should be removed into the Borders where they are to continue, and the Summer following they will produce Flowers and Seeds.

But if you would propagate them by parting their Roots, the best Season for this Work is in *September* or *October*; for if it be done in the *Spring*, they seldom flower so strong the succeeding *Summer*.

The third Sort multiplies too fast by its creeping Roots, which will spread and come up at a great Distance from the old Plant, so that it is hardly to be kept within tolerable Bounds; but is very apt to run over whatever Plants stand near, for which Reason it should never be placed amongst choice Flowers, but allowed a Place in some abject Part of the Garden, in a Corner allotted to it, where it will

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grow to the Height of four Feet, and produce large radiated white Flowers in *August* and *September*.

The fourth Sort is seldom admitted into curious Flower-Gardens, it being a rambling Plant, and the Branches trailing upon the Ground, renders it unsightly, nor are the Flowers very beautiful; so that it is seldom preserved but in Botanick Gardens.

These are all very hardy Plants, and will grow in almost any Soil or Situation, and there being very little Trouble in their Culture, they deserve Room in all large Gardens.

The sixth Sort is tenderer than any of the former, and must be preserved in Pots and sheltered in the Winter. This is propagated by planting Cuttings in any of the Summer Months, into a Border of light Earth, observing to water and shade them from the great Heat of the Sun until they have taken Root, after which they must be planted into Pots fill'd with light fresh Earth, and expos'd to the open Air until the Middle or latter End of *October*, when they must be housed; but should be placed into the coolest Part of the House, where they may have much free Air in mild Weather, and must be frequently refresh'd with Water; but in *Summer* Time they may be expos'd to the open Air, in a shady Situation, where they will thrive much better than if expos'd to the Sun, which would dry the Earth too fast, so that they would constantly require to be watered.

This Plant is not apt to continue above two or three Years without renewing, therefore Cuttings should be planted every other Year, to maintain the Kind, where
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People are curious to preserve their Varieties: There is no great Beauty in this Plant, but it is preserved in some Gardens, for the true *Pellitory of Spain*, which in reality is a different Plant, though this has a very sharp acid Taste, much like that of the *Pellitory*.

LEUCOJUM; Stock-Gilli-flower.

The Characters are;

The Flower is composed for the most Part of four Leaves, which are placed in Form of a Cross; out of the Flower-cup rises the Pointal, which becomes a long flat Pod, divided into two Cells by an intermediate Partition, to which the Values adhere on both Sides, and are furnish'd with flat smooth Seeds, which are orbicular and border'd round their Edges; to which may be added, the Flowers are specious and sweet-smelling.

The Species are;

1. **LEUCOJUM**; *incanum, majus*. C. B. P. Great hoary Stock Gilli-flower, with single white Flowers.

2. **LEUCOJUM**; *incanum, majus, flore cinericeo*. C. B. P. The great hoary Stock-Gilli-flower, with an Ash-colour'd Flower.

3. **LEUCOJUM**; *purpureum, vel rubrum*. C. B. P. Purple or Red Stock-Gilli-flower.

4. **LEUCOJUM**; *incanum, majus, coccineum*. Mor. Hist. The greater hoary crimson Stock-Gilli-flower, vulgarly call'd the *Brumpton Stock*.

5. **LEUCOJUM**; *violaceum*. Tabern. Violet-coloured Stock-Gilli-flower.

6. **LEUCOJUM**; *incanum, majus, multiplex, flore purpureo*. C. B. P. Greater hoary Stock-Gilli-flower, with a double purple Flower.

7. **LEUCOJUM**; *incanum, majus, multiplex, flore rubro*. C. B. P. Greater hoary Stock-Gilli-flower, with a double red Flower.

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8. **LEUCOJUM**; *incanum, majus, multiplex, flore albo*. Tourn. Greater hoary Stock-Gilli-flower, with a double white Flower.

9. **LEUCOJUM**; *incanum, majus, variegatum, pleno flore*. C. B. P. The greater hoary Stock-Gilli-flower, with a double variegated Flower.

10. **LEUCOJUM**; *majus, incanum, variegatum, album, flore simplici, maculis in albo rubris*. C. B. P. The greater hoary Stock Gilli-flower, with a single white Flower spotted and strip'd with Red.

11. **LEUCOJUM**; *pleno flore, album, sanguineis maculis signatum*. Hort. Eyst. White Stock-Gilli-flower, with a double Flower, mark'd with bloody Spots.

12. **LEUCOJUM**; *pleno flore, album, purpureis maculis signatum*. Hort. Eyst. White Stock-Gilli-flower, with a double Flower mark'd with purple Spots.

13. **LEUCOJUM**; *incanum majus, variegatum, pleno flore, foliis in ambitu argenteis*. H. L. The greater hoary, variegated Stock-Gilli-flower, with a double Flower, and Leaves edg'd with Silver.

14. **LEUCOJUM**; *minus & annuum*. Dod. Lesser annual Stock-Gilli-flower.

15. **LEUCOJUM**; *album, odoratissimum, folio viridi*. C. B. P. The most sweet-smelling Stock-Gilli-flower, with a green Leaf, commonly call'd the *White Wall-flower*.

16. **LEUCOJUM**; *album, odoratissimum, folio viridi, pleno flore*. The double white Wall-flower; *vulgó*.

17. **LEUCOJUM**; *luteum, vulgare*. C. B. P. The common yellow Wall-flower.

18. **LEUCOJUM**; *luteum, flore pleno, minus*. C. B. P. The common double Wall-flower.

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19. *LEUCOJUM*; *angustifolium*, *Alpinum*, *flore sulphureo*. H. R. Par. Narrow-leav'd Alpine Wall-flower, with a Brimstone-colour'd Flower.

20. *LEUCOJUM*; *angustifolium*, *Alpinum*, *flore pleno, sulphureo*. Narrow-leav'd Alpine Wall-flower, with a double Brimstone-colour'd Flower, commonly call'd the *Straw-colour'd Wall-flower*.

21. *LEUCOJUM*; *luteum*, *magno flore*. C. B. P. Wall-flower, with a large Flower.

22. *LEUCOJUM*; *luteum*, *flore pleno, majus*. C. B. P. The greater Wall-flower, with a double Flower.

23. *LEUCOJUM*; *majus*, *flore intus luteo extus, ferrugineo*. Greater Wall-flower, with larger Flowers, Yellow within, and on the Outside of an Iron-colour, commonly call'd the *Ravenal Wall-flower*.

24. *LEUCOJUM*; *majus*, *flore majore, pleno, intus luteo, extus ferrugineo*. The double Ravenal; *vulgô*.

25. *LEUCOJUM*; *majus*, *flore pleno ferrugineo*. Tourn. The old double bloody Wall-flower.

26. *LEUCOJUM*; *luteum*, *pleno flore, foliis ex luteo variegatis*. The yellow variegated Wall-flower, with a double Flower.

27. *LEUCOJUM*; *luteum*, *pleno flore, foliis ex albo eleganter variegatis*. The Silver-strip'd Wall-flower, with a double Flower.

There are several other Varieties of these Flowers, which are preserv'd in some curious Botanick Gardens; but those here-mentioned, are the most beautiful, and best worth propagating, in all curious Flower-Gardens.

All the Sorts of *Stock-Gilli-flowers* are propagated by Seeds: The best Time for Sowing 'em is in the Beginning of *April*, upon a Border of fresh light Earth, where

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they may be expos'd to the Morning Sun; for if they are too much expos'd to the Sun in the Heat of the Day, they are very subject to be eaten by a Sort of Fly, as they often are while young, upon a hot dry Soil: To remedy which, you should always sow a few *Radishes* amongst them, which will secure 'em from this Mischief; for the Flies will always prey upon the *Radishes*, whereby you *Gilli-flower* Plants will be preserved; but then you must not suffer the *Radishes* to be too thick amongst them, for that would draw 'em up very weak, and cause 'em to be long-shank'd. When your Plants have gotten six Leaves, they must be transplanted into other Borders of the like fresh Earth, and expos'd to the Morning Sun at about four Inches Distance, observing to water and shade 'em until they have taken Root; after which, they will require no farther Care, than only to keep them clear from Weeds until the Latter-end of *August*, or the Beginning of *September*, when you must transplant them into the Borders of the Pleasure-Garden; which should be done, if possible, in moist Weather, that they may the sooner strike Root, whereby they will be securely fasten'd in the Ground before the Frost comes on, which would prevent their taking Root, and thereby either quite destroy them, or at least cause 'em to flower very weak the succeeding Spring.

There are many People who make a great Stir about sowing these Seeds, and transplanting the Plants always at the same Time when the Moon is at the Full, in order to obtain a greater Number of double Flowers; but from several Years Observation, I could never observe any thing in this Management, nor from

from the frequently removing the Plants, as is by some directed, which only weakens them, and causes 'em to produce smaller Bunches of Flowers; but I could not find any more of them come double by this Management, than if they had never been remov'd: But the best Method that I have observ'd, to have these Flowers in the greatest Perfection, is to change the Seeds every Year, if you can procure a good Correspondent at some Place at a great Distance from you, who will faithfully furnish you with good Seeds: And in saving these Seeds, if you observe a greater Number of Petals than usual in the single Flowers, it is a good Sign that the Seeds of such Plants will produce double Flowers.

As these Plants are commonly biennial, and seldom continue longer than the second Year, so there will be a Necessity of sowing Seeds every Year; for when they have flower'd and seeded, they commonly decay soon after, as also do the Double Flowers soon after they are out of flower; or if some of them should continue another Year, they are seldom so strong, or produce so fair Flowers as the young seedling Plants: so that, upon the Whole, they are scarcely worth standing. And tho' some People recommend the Propagating the Double Sorts from Slips and Cuttings, as the surest Way to have Double Flowers, which indeed is very true; yet the Plants thus rais'd are always weaker than those rais'd from Seeds, and never produce their Flowers near so large or fair: Wherefore, (as I said before) it is better to have a Succession of Seedling Plants every Year, amongst which you will always have a Quantity of Double Flowers, provided your Seed be good.

The *Brompton* Stock-Gilli-flower is by many People most valu'd, for the Largeness of its Flowers, and the Brightness of their Colour: but this Sort seldom produces more than one Spike of Flowers upon a Plant; whereas the *Italian* and *Purple* Sorts produce several very fair Bunches upon each Plant, especially if they have Strength: And there is a Sort commonly call'd the *Stock-major*, (which, probably, is the seventh Sort here mention'd) which branches out on every Side, and produces many fair Spikes of Flowers from one Root; these are of a beautiful Red Colour: As doth another Sort, commonly (tho' falsely) call'd the *Annual Stock*, which will produce its Flowers the first Year from Seed; but then the Plants commonly continue the next Season, and flower again very strong, and these often produce some Variety in the Colour of their Flowers, some being of a beautiful Scarlet, and others of a pale Red Colour, and some of them are finely variegated; and these all produc'd from Seeds taken from the same Plant: but this Sort is very apt to degenerate, if the Seeds are not frequently changed.

The small *Annual Stock-Gilli-flower* will produce Flowers in about ten Weeks after sowing, (which has occasion'd its being call'd the *Ten Weeks Stock*); and if the Season be tolerably cool and moist, these Flowers will be very large: And many times there are large Double Flowers produc'd amongst them, which renders them well worth propagating, especially if you sow them in *May*, which will cause them to flower in *August* and *September*, when Flowers are beginning to be scarce in the Gardens. These Plants produce ripe Seeds

the same Year, and rarely survive a Winter.

These Plants should all be planted in a fresh light Soil, which must not be dung'd; for they don't do so well upon a rich Soil, in which they are apt to grow very rank, and then their Roots canker and decay; so that they seldom abide the Winter in such Soils; but in a fresh Soil; they will stand our ordinary Winters extremely well, and will produce large fair Flowers.

The common Single *Wall-flower* is very seldom cultivated in Gardens, but is often found growing upon old Walls and Buildings in divers Parts of *England*: This is the Sort which is directed in the *College Dispensatory* for medicinal Uses. But the Double of this Kind is very common in most of the *English* Gardens, which is propagated by planting Slips or Cuttings in any of the Spring Months, observing to water and shade them until they have taken Root; after which, they may be remov'd to the Places where they are to remain.

The Straw-colour'd *Wall-flower* with Double Flowers was formerly more common in the *English* Gardens than at present: This is a much finer Sort for Shew than the Common, the Plants generally growing more upright; and the Spikes of Flowers are much larger, and grow much closer together than those: but the Flowers have very little Scent; which, I suppose, has occasion'd its being less cultivated than it was formerly; tho' indeed, for Shew, it is inferior to none of the Sorts of *Wall-flowers*: This is also propagated by Slips, as the Common Sort.

The White *Wall-flower* is propagated by sowing the Seeds in *April*, in the manner before directed for

the *Stock-Gilli-flowers*; and if the Seeds are good, there will be many Double Flowers produc'd amongst them, which may be continu'd, by planting the Slips in the same manner as hath been directed for the common *Wall-flower*. But the Double of this Kind being somewhat tenderer than the other Sorts of *Wall-flowers*, should be planted into Pots fill'd with light fresh Earth, and in the Winter-season should be plac'd under a Hot-bed Frame, where they may be shelter'd from severe Frosts; but in mild Weather they should have as much free open Air as possible; in which Management they will endure two or three Years, and produce fair Flowers.

The large Flowering *Wall-flower* is also propagated by Seeds in the same manner as the *Stock-Gilli-flowers*; for tho' it will grow from Slips, yet these seldom make so good Plants as those produc'd from Seeds, nor will they flower so strong. This Sort rarely produces many Double Flowers, but yet is well worth propagating, for the Largeness and Sweetness of its Flowers; and if they are planted in a very poor dry Soil, will continue two or three Years, and endure the Cold extremely well.

The *Ravenal Wall-flower* is at present in the greatest Esteem with the curious Florists, the Flowers of this Kind being full as large as the last-mention'd Sort, and are of a fine Reddish or Iron Colour on the Outside, as also of an extraordinary Sweetness; and this is more apt to produce Double Flowers than the former: It is propagated by Seeds, which should be sown in *March*, and manag'd as was directed for the *Stock-Gilli-flower*, observing never to plant them in a rich Soil, which will cause them

to grow very fast, during the Summer-season; but they seldom endure the Winter in such Soils. The Double-flower'd Plants of this Kind may also be propagated by Slips, in the same manner as the before-mention'd Sorts; but these should be shelter'd in Winter, as was directed for the white *Wall-flower*, otherwise they are subject to be kill'd by very sharp Frosts. The Seeds of this Kind should be often chang'd, or else they will greatly degenerate.

The old Double Bloody *Wall-flower* was formerly more common in England than at present, it being at this Time rarely to be seen: This is a Variety of the common Double *Wall-flower*, from which it only differs in having the Outside of the Petals of a Bloody Colour: It may be propagated by Slips, as the common Sort; but requires to be shelter'd from extreme Cold in the Winter, which often destroys these Plants if they are too much expos'd to it.

The Yellow-strip'd *Wall-flower* is also a Variety of the common Double Sort, having its Leaves beautifully variegated in the Spring and Winter-season; but in the Summer, when the Plants are very free of Growth, they degenerate to be almost quite plain, so that at that Season there is very little Beauty in them: This is also propagated by Slips, as the Common Sort; but should be planted in a warm Situation, otherwise it will often suffer by great Colds in Winter.

The Silver-strip'd *Wall-flower* is much more beautiful than the last, and generally retains its beautiful Variegation through the whole Year. This is propagated by Slips, as the former; but should be shelter'd in Winter, being much tenderer than

the last; for which Reason, the Plants should be set into Pots, and treated as the Double White *Wall-flower*: but you should observe, never to plant them in a rich Soil, which will cause them to become plain, (as I have often observ'd) nor should they have too much Moisture, which very often destroys 'em.

All the Sorts of *Wall-flowers* will abide the Cold much better if planted in a very gravelly and stony Soil, than when they are in a rich Earth, as may be observ'd by those which grow upon the Tops of Walls, and other Buildings, where sometimes they are very much expos'd to the cold Winds, and yet often endure the sharpest Winters; when those which were planted in a good Soil have been destroy'd, notwithstanding they have a warm Situation.

LEVEL, a Mathematical Instrument serving to draw a Line parallel to the Horizon, not only for various Uses in Masonry, &c. but also to measure the Difference of Ascent and Descent between several Places, for the Conveying of Water, Draining of Fens, &c.

A *Water Level* shews the Horizontal Line, by means of a Surface of Water, or other Liquid, founded on this Principle, that Water always naturally places itself level.

The most simple Instrument for this Use, is made of a long wooden Trough or Canal whose Sides are parallel to its Base; so that being equally fill'd with Water, the Surface thereof shews the Line of Level.

This *Level* is also made with two Cups fill'd to the two Ends of a Pipe three or four Feet long, about an Inch in diameter; by means whereof, the Water communicates from the one to the other Cup; and this Pipe being moveable on its

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Stand, by means of a Ball and Socket, when the two Cups become equally full of Water, the two Surfaces mark the Line of *Level*.

Instead of Cups, this Instrument may be made with two short Cylinders of Glass three or four Inches long, fasten'd to each End of the Pipe with Wax or Mastick; then the Pipe being fill'd either with common or colour'd Water, will shew itself through the Cylinder, by means of which the *Line of Level* is determin'd; the Height of the Water, with respect to the Centre of the Earth, being always the same in both Cylinders. This *Level* is very commodious in Levelling small Distances.

If you would level any Piece of Ground that you can see from Side to Side, or from the Middle to any Side, set up your Instrument in the Middle of it, whether it be a *Water Level* or a *Ground Level* with Sights: Place it so high, that you may see over the highest Part of the Ground half a Foot, or a Foot; then set up a Stake in the Middle, so that the Top may be exactly level with the Sights, and another Stake on the highest Side, the Top of which must be level with the middle Stake: Then either turn the *Level* or Look-back Sight, and set up another Stake on the Lower Ground level with the two first; so then you will have three Stakes standing in a *Level*.

Then keeping your *Level* true to the middle Stake, turn it 'till it makes Right Angles with the three Stakes, and set up two Stakes on each Side one *Level* with those three: so that then you will have five Stakes in two Lines set true *Level*.

If the Ground be large, you may set up two Rows more by the *Le-*

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vel; but five Stakes are enough in a small Ground.

When this is done, you may lay your *Level* aside, and look over the the Head of one to the Head of another, and cause the Person who assists you to put down Stakes between two and two, 'till you have set as many Stakes *Level* in the Ground as you think convenient; or you may use a Rule, which being plac'd level with the Head of the Stake, you may look over that to the Head of the other, and put Stakes down between you and the other Stake to what Number you please.

The Ground being thus staked out, with all the Stakes Heads level, and half a Foot higher than the highest Ground, in some Grounds the middle Stake and the Stakes in the Cross-Line will be the *Level-Line* the Ground must be brought to; that is, abating the Hill, and filling up the Low Side to the *Level* of the Mid-Line. But if the Ground be very uneven, then you must measure over all the Stakes, and take them middle high for their *Mean-Level*, and by the *Rule of Three*, proportion your Ground to that.

As for Instance: If a Valley be ten Poles in length, and two Feet in depth from the strait Line, and there be a Hill five Poles long; How many Feet deep must a Person sink those five Poles to fill up the Valley? This Question may be resolv'd by the Inverse or Back *Rule of Three*, and will stand thus: As 5 is to 2, so is 10 to 4.

$$5 \text{ --- } 2 \text{ --- } 10$$

2

$$5)20(4$$

So that a Person must go four Feet deep in such a Hill to make good such a Valley.

If

If you are to abutt the Top of a Hill four Feet deep, and two Poles from the Top of that Hill, those four Feet are to come out.

To perform this, set up a Stake on the Top of a Hill two or three Feet above-ground, and another of the same Height where the Depth comes out; set down a Stake three Rods from that, till the Head comes to be in a Line with these two, and at that Stake you must be one Foot deep.

At six Poles, stake down another, as before, and there you must be two Feet deep: Then stake down another at nine Poles, and there you must be three Feet deep; and you may set more Stakes at equal Distances, which will direct you so as that you cannot go amiss.

LIGUSTICUM; Loveage.

The Characters are;

The Lobes of the Leaves are cut about their Borders, like those of Parsley; the Flowers consist, for the most part, of five Leaves, which expand in Form of a Rose; each of these Flowers are succeeded by two oblong, gibbose furrow'd Seeds, which on one Side have a leafy Border.

The Species are;

1. LIGUSTICUM; *vulgare, foliis Apii*. J. B. Common Loveage.
2. LIGUSTICUM; *Scoticum, Apii folio*. Tourn. Scotch Loveage, with a Parsley Leaf.
3. LIGUSTICUM; *Gracum, Apii folio*. T. Cor. Greek Loveage, with a Parsley Leaf.

The first of these Plants is often us'd in Medicine, and was formerly reckon'd amongst the Kitchen Herbs, but is now almost intirely cast out of the Kitchen-Garden, and only cultivated for Physical Uses: This Plant may be easily propagated by sowing the Seeds, soon after they

are ripe, in a moist Spot of Ground; and when the Plants come up the Spring following, they should be transplanted out to the Distance of eighteen Inches or two Feet asunder, in a moist Soil; where, if they are kept clear from Weeds, they will thrive exceedingly, and the second Summer will produce Seeds: But the Herb may be frequently cut for Use, their Roots abiding several Years, do shoot again continually after being cut; so that a few Plants will be sufficient for the Use of a Family.

The second and third Sorts are only preserv'd in Collections of Plants for Variety, but are not in any Use at present. These may be propagated in the same Manner as the former.

LIGUSTRUM; the Privet.

The Characters are;

The Leaves grow by Pairs opposite to each other; the Flower consists of one Leaf, is tubulous, and divided at the Top into five Segments; the Ovary in the Centre of the Flower-cup becomes a globular, soft Fruit, full of Juice, in which are lodg'd four Seeds.

The Species are;

1. LIGUSTRUM; *vulgare. Park. Theat.* The common Privet.
2. LIGUSTRUM; *foliis majoribus & magis acuminatis, toto anno folio retinens*. Pluk. Alm. The Evergreen Privet.
3. LIGUSTRUM; *foliis è luteo variegatis*. H. R. Par. The yellow blotch'd Privet.
4. LIGUSTRUM; *foliis argentatis*. Breyn. Prod. The Silver-strip'd Privet.

The first of these Plants is very common in most Parts of England, and is seldom cultivated in Gardens, unless for Variety: It commonly grows about eight or ten Feet high

high, in Form of a Shrub, but may, by Art, be train'd up to a much greater Height, and may be intermix'd among other Trees of low Growth in Wildernesses.

The second Sort will grow much larger than the first, and is equally hardy: The Leaves of this commonly remain upon the Tree until the Spring before they decay, unless in very hard Winters; for which Reason, it is more esteem'd than the common Sort.

These Plants are easily propagated by laying down their tender Shoots in Autumn, which in one Year's Time will be rooted enough to transplant; when they may be remov'd to the Places where they are design'd to remain, or planted in a Nursery for two or three Years; where they may be train'd for the Purposes design'd.

Formerly these Plants were greatly in Use for Hedges, but since to many others of greater Beauty have been introduc'd, which are much preferable to these for such Purposes, they have been entirely rejected, the Trouble in keeping them in Order being very great, nor are the Hedges made with them ever so thick and handsome, as those made with divers other Plants.

The two variegated Kinds are pretty Varieties amongst other strip'd Shrubs: These may be propagated by budding, or inarching them upon the plain Sort, as also by laying down their Branches; but as they seldom shoot so fast, as to produce many Branches proper for Layers, so the other Method is chiefly us'd. The Silver-strip'd Sort is somewhat tenderer than the Plain, but will endure the open Air, if planted in a dry Soil, and in a warm Situation; but if either of the variegated Kinds be planted in a moist, rich Soil, they

are subject to become plain from their vigorous Growth.

LILAC; The Pipe-Tree.

The Characters are;

The Flowers consist of one Leaf, are Funnel-shap'd, but divided at Top into five Segments, and are collected into oblong specious Spikes; the Flowers are succeeded by compress'd Pods, which are scarce an Inch long, and are divided into two Cells, in which are contain'd broad, flat Seeds, which are compress'd on their Edges.

The Species are;

1. LILAC; *Marshalli*. The common Blue Lilac, or Pipe-Tree.

2. LILAC; *flore albo*. Tourn. The White Lilac, or Pipe-Tree.

3. LILAC; *flore saturate purpureo*. Tourn. The Deep purple Lilac, or Pipe-Tree.

4. LILAC; *flore albo, foliis ex luteo variegatis*. Cat. Plant. Hort. The Yellow-blotch'd Lilac.

5. LILAC; *flore albo, foliis ex albo variegatis*. Cat. Plant. Hort. The White-blotch'd Lilac.

6. LILAC; *folia ligustri*. Tourn. Lilac with Privet Leaves, falsely call'd, The Persian Jasmine.

7. LILAC; *laciniato folio*. Tourn. Lilac, with cut Leaves, falsely call'd, The Cut-leav'd Persian Jasmine.

The three first Sorts do commonly grow eighteen or twenty Feet high, and are very great Ornaments to Quarters of flowering Trees in the Spring during their flowering Season, if rightly dispos'd amongst Trees of the same Growth. The first and second Sorts are more common than the third; but the third is much preferable to the second: The Flowers of that growing much closer upon the Bunches, and are of a finer Purple Colour, and the Trees generally produce them in greater Quantities; so that this, and the white Sort, being regularly intermix'd

mix'd, do afford an agreeable Variety, tho' the second may be admitted to add a Lustre to the other.

These Plants are easily propagated by Suckers, which they send forth in great Plenty from the old Plants: These should be taken off in *October*, and planted into a Nursery, where they may remain three or four Years; after which Time they will be fit to transplant into the Wilderness, where they are to continue: They will require no other Culture than to dig the Ground about them every Year, and take off the Suckers which are produc'd from their Roots; which, if suffer'd to remain, would starve the old Plants, and grow up into an irregular Thicket.

They will grow in almost any Soil or Situation, but do commonly flower best in that which is dry; for though a strong, moist Soil will cause them to grow more vigorously, yet they are seldom so productive of Flowers as in a dry Soil, which is generally the Case with most other Plants.

The two variegated Sorts are preserv'd by some Persons, who delight in strip'd Plants, as Curiosities, but they have no great Beauty in them; for in the Summer-time, when these Plants are free of Growth, their white and yellow Blotches do not appear very plain: and when they do, it appears more like a Distemper in them, than any real Beauty. These may be propagated by budding or inarching them upon the common Sort.

The Privet-leav'd *Lilacs* are of humbler Growth than those before-mention'd, seldom rising above six or seven Feet high, but are very great Ornaments in small

Wilderness-Quarters of flowering Shrubs, where being intermix'd with other Shrubs of the same Growth, they afford an agreeable Prospect. These produce their Flowers in much longer and slenderer Bunches than the other Sorts, and have a more agreeable Scent.

They may be propagated from Suckers as the former; but as they seldom produce them in such Plenty, so the most expeditious Method is, to propagate them by Layers, which will take Root in one Year fit to transplant; and the Plants thus rais'd, will be much better rooted than those produc'd by Suckers, and are not so subject to send forth Suckers from their Roots.

The Cut-leav'd Sort differs from the other in no other respect but in having its older Leaves deeply cut in: They are both very hardy, and will grow in almost any Soil or Situation, and may be train'd up to regular Heads, if rightly manag'd while young.

LILIO ASPHODELUS; The Asphodel or Day Lily.

The Characters are;

It hath a Root like Asphodel (or Kingspear;) the Flower consists of one Leaf, which is deeply cut into six Segments, and expands in Form of a Lily; the Flower is succeeded by an oval Fruit, which contains several roundish Seeds.

The Species are;

1. **LILIO-ASPHODELUS;** *lutens.* Park. Par. The Yellow Day Lily.

2. **LILIO-ASPHODELUS;** *punicens.* Park. Par. The Red Day Lily.

These Plants are very common in most of the old English Gardens, the first is often call'd by the Gardeners, the *Yellow Tuberose*, from its having a very agreeable Scent; but the other is called the *Day Lily*,

Lily, or the Tuberoso Orange Lily, in most Places.

They are both very hardy Plants, and will multiply exceedingly, if suffered to remain two or three Years undisturbed, especially the red Sort, which sends forth great Quantities of Off-sets from the old Plants, by which they may be easily propagated: The best Time to transplant their Roots is in September or October, after their Leaves are decay'd (tho' they may be removed at almost any Time, provided they are taken up with Care, and not kept too long above Ground) they are proper for large Borders in a Pleasure Garden, or to plant under Trees in Avenues, where they will thrive and flower very well; but they are too large for small Flower Gardens, and afford Harbour for Snails and other Vermin, for which Reason they should not be admitted too near choicer Plants.

They will grow in almost any Soil or Situation; the yellow Sort produces its Flowers in May and June, and the red Sort comes about a Month later; their Flowers are of a short Duration, seldom continuing above two Days, but are succeeded by fresh Flowers for near a Month successively; but the Flowers of the yellow Sort are smaller, and of longer Duration.

LILIO-NARCISSUS; Lily-Daffodil.

The Characters are;

It hath a coated, bulbous Root; the Flower is shap'd like a Lily, consisting of six Leaves, and is cover'd with a membranaceous Sheath like the Narcissus; the Fruit succeeds the Flower in the same Form of the Narcissus; is oblong or roundish, and

divided into three Cells, which are fill'd with roundish Seeds.

The Species are;

1. LILIO-NARCISSUS; *Indicus, saturato colore purpurascens. Mor. Hist.* The Lily-Daffodil, of a deep Purple-colour.

2. LILIO-NARCISSUS; *Indicus, flore albo, exterius rubente. Tourn.* Indian Lily Daffodil, with a white Flower, which is reddish on the Outside.

3. LILIO-NARCISSUS; *polyanthus, flore incarnato, fundo ex luteo albescente. Sloan. Cat.* Many-flower'd Lily-Daffodil, with a Carnation Flower, having a whitish yellow Bottom, commonly call'd in the West Indies, Red Lily.

4. LILIO-NARCISSUS; *Japonicus, rutilo flore. Mor. Hist.* The Japan Lily-Daffodil, commonly called the Guernsey Lily.

5. LILIO-NARCISSUS; *folio latissimo, floribus niveis inodoris. Tourn.* Lily-Daffodil, with a very broad Leaf, and snowy Flowers without Scent.

6. LILIO-NARCISSUS; *Indicus, Narcissus Liliflorus, aureus, striis, argenteis pictus, floribus amplis, cernuis gemellis, caule magno cepa fistuloso. Pluk. Phy.* Indian Lily-Daffodil, with ample Gold-colour'd Flowers spotted with Silver, and a large hollow Stalk.

7. LILIO-NARCISSUS; *Indicus, flore incarnato, lineis albis striato, odorato. Indian Lily-Daffodil, with a Carnation Flower strip'd with white Lines, and of a sweet Scent, commonly called the Bella-donna Lily.*

8. LILIO-NARCISSUS; *luteus, autumnalis, minor. Tourn.* The lesser yellow Autumnal Lily-Daffodil, commonly call'd the Autumnal Narcissus.

The first of these Plants is very rare at present in England; but in Italy

Italy it is very common, especially about *Florence*, where they bring large Bunches of the Flowers into the Market and sell them for Flower-Pots, by the Name of *Narcissus Bella-donna*; and is probably one of the first Sorts of this Flower which was brought into *Europe*. This Plant thrives so well in *Italy*, as to need no other Culture than the common *Lily*, and although it does not flower until *August*, yet it commonly produces good Seeds in that Country, from which they propagate them in great Plenty; but with us they require to be planted in Pots fill'd with light fresh Earth, and in Winter they must be shelter'd to prevent their Leaves being destroy'd by the Frost, which if it does not quite kill their Roots, will so weaken them, as that they will not recover Strength to flower in several Years after, though you should attend them with ever so much Care. This Plant produces its Flowers in *September*, and the Green Leaves come up soon after, and abide all the *Winter* and *Spring* until *May*, at which Time they decay, soon after which the Roots should be transplanted, for if they are let stand till *July*, they will have sent forth new Fibres, when it will greatly injure the Roots if they are disturb'd.

The second Sort is less common in *England* than the first; this seldom produces more than one Flower upon each Stalk, which is smaller than those of the former; but nearly of the same Figure; this is also cultivated as the former, and flowers about the same Season.

The third Sort is very common in *Barbados*, *St. Christopher's*, and the other warm Islands of the

West Indies; but at present it is very rare in *England*: This Sort is much tenderer than either of the former, and will require to be kept in a Hot-bed of Tanner's Bark, in order to produce Flowers. The Roots of this Plant may be very easily brought from the *West Indies*, if they are taken up immediately after their Leaves decay, and sent over in a Box dry, for if they are planted in Tubs of Earth, they generally rot in their Passage, by receiving too great Quantities of Water.

The fourth Sort is suppos'd to come originally from *Japan*, but has been many Years cultivated in the Gardens of *Guernsey* and *Jersey*; in both which Places they seem to thrive as well as if it was their native Country; and from those Islands their Roots are sent annually to the Curious in most Parts of *Europe*, and are commonly call'd *Guernsey Lilies*; the Roots of this Plant are generally brought over in *July* and *August*, but the sooner they are taken out of the Ground after their Leaves decay, they are the better: for although the Roots which are taken up when their Flower-stems begin to appear, will flower, yet their Flowers will not be so large, nor will their Roots be near so good after, as those which were removed before they had sent out fresh Fibres.

When these Roots come over they should be planted in Pots filled with fresh, light, sandy Earth, mix'd with a little very rotten Dung, and placed in a warm Situation, observing now and then to refresh the Earth with Water; but by no Means let them have too much Wet, which would rot their Roots, especially before they come up:

up: About the Middle of *August*, such of the Roots as are strong enough to flower, will begin to shew the Bud of their Flower-stem (which is commonly of a red Colour) therefore you should remove these Pots into a Situation where they may have the full Benefit of the Sun, and may be shelter'd from strong Winds; but by no Means place them too near a Wall, nor under Glasses, which would draw them up weak, and render them less beautiful: At this Season they should be gently refresh'd with Water, if the Weather be warm and dry; but if it should prove very wet, they should be screen'd from it.

When the Flowers begin to open, the Pots should be removed under Shelter, to prevent the Flowers from being injured by too much Wet; but they must not be kept too close, nor placed in a Situation too warm, which would occasion their Colour to be less lively, and hasten their Decay. The Flowers of this Plant will continue in Beauty (if rightly manag'd) a full Month, and though they have no Scent, yet for the Richness of their Colour, they are justly esteem'd in the first Rank of the Flowery Race.

After the Flowers are decay'd, the Green Leaves will begin to shoot forth in Length, and if shelter'd from severe Cold, will continue growing all the Winter; but they must have as much free Air as possible in mild Weather, and be cover'd only in great Rains or Frosts, for which Purpose a common Hot-bed Frame is the properest Shelter for them, under which if they are placed, the Glasses may be taken off constantly every Day in dry open Weather,

which will encourage the Leaves to grow strong and broad; whereas when they are placed in a Green-house, or not exposed to the open Air, they will grow long and slender, and have a pale, weak Aspect, whereby the Roots will become weak, so that it seldom happens that they produce Flowers under such Management.

These Roots should be transplanted every other Year toward the latter End of *June*, or the Beginning of *July*, and planted into fresh Earth (but they should not be oftener removed, for that would retard their Flowering.) The Offsets should also be taken off and planted into separate Pots, which in three Years Time will produce Flowers, so that after Person are once stock'd with these Roots, they may increase them, so as to have a Supply of blowing Roots, without being at the Trouble or Expence of sending to *Guernsey* every Year for fresh Roots; and the Roots preserved here, will flower stronger than those which are usually brought from thence; for the Inhabitants of those Islands are not very curious in cultivating these Roots: Their usual Method is to plant them at a great Distance in a Bed of common Earth, where they let them remain for many Years, in which Time they produce such a Number of Offsets, that many times one single Cluster has contain'd above a Hundred Roots; by which Means those which grow on the Inside, are so much compressed by the outer Roots, that they are perfectly flatted, and from the Number of Roots they are all rendered weak, and so unfit to produce such large Stems of Flowers, as those which have grown single and are of a spherical Figure.

But

But when a Person has got a large Number of these Roots, it will be troublesome to preserve them in Pots, therefore you should prepare a Bed of the following Earth, in some well-shelter'd Part of the Garden, *viz.* Take a third Part of fresh Virgin Earth upon a Pasture Ground, which is light, then put near an equal Part of Sea Sand, to which you should add rotten Dung and sifted Lime-rubbish of each an equal Quantity: With this Earth (when well mix'd and incorporated) you should make your Bed about a Foot thick, raising it about four or five Inches above the Surface of the Ground, if the Situation be dry; but if the Ground be wet, you should raise it eight or nine Inches higher. In this Bed about the Beginning of *July* (as was before directed) you should plant the Roots about six Inches asunder each Way, and in the *Winter*, when the Frost begins, you should either cover the Bed with a Frame, or arch it over and cover it with Mats and Straw, to prevent their Leaves from being pinch'd with Cold; but in the *Summer* the Covering may be intirely removed, and the Bed kept constantly clear from Weeds, observing to stir the Surface of the Earth now and then, and every Year when the Leaves are decay'd, you should sift a little fresh Earth over the Beds, to encourage the Roots. In this Bed the Roots may remain until they are strong enough to produce Flowers, when they may be taken up and planted into Pots as was before directed, or suffered to remain in the same Bed to flower.

The Roots of these Plants do not flower again the succeeding Year (as in many other Sorts of

Bulbs) but if their Bulbs contain two Buds in their Center, as is often the Case, they very frequently flower twice within the Compass of three Years, after which the same individual Root does not flower again; but only the Off-sets from it.

The fifth Sort is at present very rare in *England*, and only to be found in some very curious Gardens; this is much tenderer than the last, and requires to be managed as was directed for the third Sort, with which Management it will thrive exceeding well; but you must observe never to give these Roots much Water, after their Leaves are decay'd (which is soon after *Christmas*) until they shoot out again in *April*, for Moisture at that Season, while they are in an unactive State, is very subject to rot them: This Plant produces its Flowers commonly in *March*, and the green Leaves appear soon after.

The sixth Sort is also tender, and requires to be kept in a warm Stove in Winter; but in the Summer-season it will bear to be expos'd to the open Air, in warm, dry Weather; this Sort should be treated in the same Manner as the last, with this Difference only, *viz.* that it may be preserved without being plung'd in Tanners Bark: This Plant produces its Flowers nearly about the same Time with the last; but the Flowers of this are much more beautiful.

The seventh Sort was brought from *Portugal*, where they are in great Plenty, and is by the Inhabitants call'd *Bella-donna*; but this is a very different Plant from that which the *Italians* call by that Name, the Flowers of this Kind being larger and paler colour'd than those of the *Italian* Sort, and seldom

seldom have more than three or four upon one Stem, whereas the other has often ten or twelve. This Plant is propagated in the same Manner as was directed for the *Guernsey Lily* (to which I refer the Reader, to avoid Repetition) the Flowers of this Plant are always produced about the same Time as the *Guernsey Lily*, but are not near so beautiful.

These Plants do not increase very fast in our Climate, for which Reason a curious Person should be furnished with several Roots of each Kind from Abroad, in order to have some Flowers every Year, for they seldom blow two Years together (as was before observed) nor does the same Root flower more than twice, which is commonly within three Years; so that where there are not six or eight Roots of each Sort, it can't be expected to have Flowers very often, notwithstanding no Art or Care be wanting in their Culture; for in their native Countries they are not constant Flowerers.

The eighth Sort is a very hardy Plant, and increases very fast from Off-sets: The Season for transplanting these Roots, is any Time from *May* to *July*, after which it will be too late to remove them, for they will begin to push out new Fibres by the Middle of that Month, if the Season be moist, and many times they flower in *August*; so that if they are then transplanted it will spoil their flowering: This Plant will grow in almost any Soil or Situation, but it will thrive best in a fresh, light, dry Soil, and in an open Situation, *i. e.* not under the Dripping of Trees, nor too near to Walls. It is commonly called by the Gardeners the *Yellow Autumnal*

Narcissus, and is usually sold by them with *Colchicums*, &c. for Autumnal Ornaments to Gardens, for which Purpose this is a very pretty Plant.

LILIUM; The Lily.

The Characters are;

It hath a bulbous Root, consisting of several fleshy Scales adhering to an Axis; the Stalk is greatly furnished with Leaves; the Flower is compos'd of six Leaves, and is shap'd somewhat like a Bell; in some Species the Petals are greatly reflex'd, but in others but little; from the Center of the Flower rises the Pistil, which becomes an oblong Fruit, that is commonly triangular, divided into three Cells, and full of compress'd Seeds, which are border'd, lying upon each other in a double Row.

The Species are;

1. LILIUM; *album, flore erecto & vulgare.* C. B. P. Common white Lily.
2. LILIUM; *album, inodorum, flore pleno.* H. R. Par. The double white Lily, without Smell.
3. LILIUM; *album, floribus dependentibus sive peregrinum.* C. B. P. The foreign white Lily, with hanging Flowers.
4. LILIUM; *album, lato caule multiflorum.* H. R. Par. The white Lily, with broad flat Stalks, bearing many Flowers.
5. LILIUM; *album, vulgare, foliis ad limbos flavescentibus.* H. L. Common white Lily, with strip'd Leaves.
6. LILIUM; *album, flore lineis purpureis variegato.* D. Marchant. The white Lily, strip'd with Purple.
7. LILIUM; *purpureo-croceum, majus.* C. B. P. The common Orange Lily; *vulgô.*
8. LILIUM; *pumilum cruentum.* Park. Par. The dwarf red Lily.
9. LILIUM;

9. LILIUM; *rubrum, multiplici flore. Park. Par.* The double red Lily.

10. LILIUM; *bulbiferum, angustifolium. C. B. P.* Narrow-leav'd bulbiferous Lily, commonly called the Fiery Lily.

11. LILIUM; *floribus reflexis, montanum. C. B. P.* The Imperial Martagon.

12. LILIUM; *floribus reflexis, albis, punctatis. C. B. P.* The white spotted Martagon.

13. LILIUM; *floribus reflexis, albis non punctatis. C. B. P.* The white Martagon, without Spots.

14. LILIUM; *floribus reflexis, montanum, flore pleno. H. R. Par.* The double flowering Martagon.

15. LILIUM; *flavum, angustifolium, flore flavo, maculis nigris distincto. C. B. P.* The spotted Canada Martagon; *vulgô.*

16. LILIUM; *miniatum, odorum, angustifolium. C. B. P.* The scarlet Martagon of Pompony; *vulgô.*

17. LILIUM; *Byzantinum, minutum, polyanthos. C. B. P.* The scarlet Martagon, with many Flowers.

18. LILIUM; *Byzantinum, minutum. C. B. P.* The common scarlet Martagon.

19. LILIUM; *Byzantinum, flore flavo. C. B. P.* The yellow Martagon of Constantinople.

20. LILIUM; *purpureo-croceum majus, foliis ex luteo eleganter variegatis.* The Orange Lily, with beautiful variegated Leaves.

There are several other Varieties of these Plants which are preserved in the curious Gardens Abroad, many of which were formerly in England (as may be gather'd from *Parkinson* and several other Writers upon curious Flowers) but these which are here mentioned are all the Sorts I can at present find in

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the Gardens near London; though it is very probable many of the other Sorts may be found in some old Gardens of this Kingdom, which were formerly possess'd by curious Delighters in Flowers; for as most of these Sorts are very hardy, and will grow with little Culture, so when they are once fix'd in a Garden, they are not very subject to decay, unless their Roots are destroy'd, but will abide many Years without any Care; therefore from such Places there may be Hopes of retrieving those Flowers again.

The common white Lily is so well known, that it will be needless to say any Thing of it in this Place: The second Sort with double Flowers, is by some Persons preserved by way of Curiosity; but there is no Beauty in it, for the Flowers seldom open, and have no Scent, so that it scarcely deserves a Place in a good Garden: The third Sort with pendulous Flowers, is sometimes called the *White Constantinople Lily*, from whence it was formerly brought, but is now become almost as plenty as the common white Lily in many Gardens; this differs from the common Sort, in having slenderer Stems which are of a purplish Colour, and the Petals of the Flowers are narrower, and the Flowers are somewhat less, and always hang down.

These Plants are all very hardy, and require no other Culture, than to be taken up every other Year (in *July* after the Flowers are decay'd) and pull off the Suckers from them, which if suffer'd to remain on, would starve the old Roots, and cause them to flower very weak; but they should not be kept long out of the Ground, nor re-

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moved after their Leaves appear above Ground, both which will weaken the Roots so much, that they will not flower the following Summer. They increase greatly from Off-sets, whereby they are become so common as to be little esteem'd.

The fourth Sort seems to be a Variety from the first: The Stalks of this are very broad, and have generally double the Number of Flowers upon each Stalk as the common, which are equally as large and fair: but whether it will constantly preserve this Difference, I can't positively affirm, tho' for three Years past I have observ'd them to remain the same in two or three different Gardens. This is equally hardy as the common Sort, and is increas'd the same way.

The *Strip'd-leav'd Lily* is a great Ornament to Flower-Borders during the Winter-season; their beautiful variegated Leaves always appearing in September, and are continu'd all the Winter, making a fine Appearance in the Depth of Winter, when few other Plants are in Beauty: For which Reason this Plant hath been greatly propagated of late Years. This is increas'd as the common Sort, but the Roots should always be planted in a fresh, light Soil, in which they will thrive exceedingly: But if you make the Ground rich with Dung, it will certainly destroy them, as will also a very wet or strong Soil. The Season for transplanting these Roots, is the same with the common Sort.

The *White Lily strip'd with Purple*, has not been many Years brought into England. Of this Kind there are two Sorts; one of which is much more beautifully

variegated than the other; both of which were obtain'd originally from Seed. These are both propagated in the same Manner as the common Sort, but should be planted in a dry, sandy Soil, mix'd with a little Lime-Rubbish, and expos'd to the Morning Sun: In which Soil and Situation they will flower exceeding well, and their Stripes will be much deeper colour'd than when they are planted in a richer Soil, and their Roots will make a better Increase.

The *Orange Lily* is so well known, that it is needless to say any Thing of it here. That Sort which is commonly call'd the *Double Orange Lily*, differs from the common only in having two or three more Petals in each Flower, which is not constant, but very apt to degenerate to the common Sort, so that it is scarcely worth preserving, unless for Variety Sake. These are propagated by Off-sets from the old Roots, which are commonly sent forth in great Plenty, and therefore the Roots should never remain more than two Years unremov'd, because the Number of Off-sets would greatly weaken them, and render their Flowers small, and fewer in Number. These may be transplanted any Time from the Beginning of *August* to the End of *October*, for they do not shoot again soon after their Stems are decay'd, as do the *White Lilies*; but, on the contrary, remain till *February* before they appear above-ground. They will grow in almost any Soil or Situation, but best in a dry, light Soil, and an open Exposure.

The *bulbous fiery Lily*, produces its Flowers three Weeks before the common Sort, and is much more beautiful. This Sort was formerly
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more common than at present, as were several other Sorts of *Lilies*: It is equally as hardy as the common Sort, and doth increase much faster; for upon the Flower-stems, between the Wings of the Leaves and the Stalk, are produc'd small Bulbs; which when taken off, and planted, do become strong Roots in two Years, so that it may be render'd very plentiful in a short Time, were People to plant all their Increase. This requires the same Soil and Culture as the *Orange Lily*; as doth also the *Dwarf Red Lily*, which is nearly allied to this. They will grow under Trees, which renders them proper to plant in Avenues; where, when intermix'd amongst other hardy Flowers of the same Growth, they will make a beautiful Appearance, and are very useful to furnish Basins and Flower-Pots for Halls, Chimnies, &c. during the Season of Flowering.

The *Imperial Martagon* is very common in most old Gardens in *England*. This is equally as hardy as the common *Lily*, and requires no other Culture: The Flowers are produc'd at the latter End of *May*, and do make a very handsome Figure in the Middle of large Borders in a Flower-Garden, but the Scent is too strong to be born by many People, for which Reason they should never be plac'd in Basins of Flowers in a Room, nor be planted too near the House.

The *White*, and the *White-spotted Martagons*, do flower about the Middle of *June*, or sometimes later: These produce a greater Number of Flowers upon a Stalk than the former, but the Flowers are seldom so large, and commonly grow more sparsely on the Stalks. These have a strong Scent, but

not quite so disagreeable as the former. The Roots of these Plants should be transplanted soon after their Stems decay; for if they are taken up late in the *Autumn*, they seldom produce their Flowers strong the succeeding *Summer*. These require a fresh, light Soil, and an open Situation; if they are suffer'd to remain three Years undisturb'd, they will make a good Increase, and produce strong Flowers.

The *Double Martagon* requires the same Soil and Culture with the two last: This produces a large Quantity of fair double Flowers upon each Stem, which renders it very valuable: The Flowers do commonly appear the Beginning of *July*, or somewhat later.

The *Spotted Canada Martagon*, is much tenderer than any of the former. The Roots of this Sort should be planted in a warm Border, where they may be protected from severe hard Frosts, by covering the Surface of the Ground with Peas-haulm, &c. It must also have a fresh, light, dry Soil, and should be planted at least six Inches deep; for when the Roots lie near the Surface, they are often injur'd by Frosts in Winter.

This Plant was originally brought from *Canada* by the *French*, from whom we were first supply'd with it, but since we have receiv'd many Roots of it from *Virginia*, where it also grows in great Plenty in the Woods. The Flowers of this Kind are almost as large as those of the *Orange Lily*, but are more reflex'd, and of a fine yellow Colour, spotted with Black: This flowers in *July*.

The *Red Martagon of Pompony*, is one of the most beautiful Sorts of all the *Martagons* which I have yet seen, and produces the greatest

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Number of Flowers upon a Stem of any of the Kinds (especially when the Roots are strong, and have remain'd undisturb'd two or three Years) when they will many times have upward of four-score Flowers upon a Stem: The Flowers are not so large, nor so deep-colour'd as the *Scarlet Martagon*, but rather of a yellowish-red Colour, and spotted with Black: This flowers commonly the latter End of *May*, or the Beginning of *June*.

The Roots of this Plant are tender, and will not endure to be often transplanted, for that will destroy them: The best Season to remove them, is soon after their Stems decay; when they should never be kept long out of the Ground, but planted again as soon as possible. These require a fresh, light, sandy Soil, but will by no Means thrive in a rich, moist Soil, which will cause 'em to rot; and they must have an open Exposure, for if they are over-hung by Trees, they will not thrive. This should also be planted as deep in the Ground as the *Canada Martagon*, for the same Reason as was before observ'd on that.

The *Scarlet Martagon*, with many Flowers, is in some curious Gardens very common, it being a very hardy Plant in respect to Cold, which it endures very well, and is easily propagated from Off-sets, as the other Sorts, but must have a warm, light, dry Soil, which should not be dung'd, nor overshadow'd with Trees, either of which will cause the Roots to decay. This is a very beautiful Flower, and very proper to adorn the Borders of large Flower-Gardens. It produces its Flowers in *July*, after most of the other Sorts,

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which are of a deep-scarlet Colour, growing many upon a Stalk.

The other *Scarlet Martagon* is also common in some Gardens, but is not so much valued as the last; the Flowers are not so deep colour'd, and it seldom has more than six or eight upon a Stem. This flowers much about the same Time as the former, and requires the same Soil and Culture.

The *Yellow Martagon of Constantinople* is very rare in *England* at present, and only to be found in the Gardens of some curious Collectors of these Beauties: This requires much the same Culture as the two last-mention'd, but must not be often remov'd, which will not only weaken the Root, but also prevent its flowering. When the Roots of this Kind have been standing three Years upon a good fresh dry Soil, I have observ'd above forty Flowers upon a Stem, which have made a very beautiful Appearance. This flowers about the same Season as the former.

The *strip'd Orange Lily* is a very beautiful Plant, and was a few Years since sold at a very great Price, but of late it hath been more common, as being easily propagated by Off-sets; so that when it is once obtain'd, it may be soon increas'd to what Number you please, provided you plant it in a dry Soil, and a warm Situation. This beautiful Plant was, some Years since, accidentally produc'd from Seeds of the common *Orange Lily*, which were shed upon a Border, where they were suffer'd to grow, until this Plants appear'd with its fine variegated Leaves; which the Owner, upon Discovery, mark'd, and, at a proper Season, remov'd into a better Situation, where it throve and increas'd so well, as in
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a few Years to be spread into divers Parts of the Kingdom. This Plant must never be planted in a rich Soil, which will greatly diminish its Beauty, and many times cause the Roots to decay.

All the Sorts of *Lilies* and *Martagons* may be propagated by sowing their Seeds; by which Method some new Varieties may be obtain'd, provided the Seeds are sav'd from the best Sorts, especially the *Martagons*, which are more inclinable to vary than the other *Lilies*. The Manner of Sowing them is as follows:

You must be provided with some square Boxes about six Inches deep, which should have Holes bored in their Bottoms, to let the Wet pass off; these Boxes should be fill'd with fresh light sandy Earth, and in the Beginning of *August*, soon after the Seeds are ripe, you must sow them thereon pretty thick, covering 'em over with light sifted Earth about half an Inch; then place the Boxes where they may have the Morning Sun only, observing, if the Season should prove dry, to refresh 'em often with Water, as also to pull out all Weeds which may be produc'd: In this Situation the Boxes should remain until *October*, when you must remove 'em where they may have as much Sun as possible, as also be screen'd from the cold North and East Winds during the Winter Season: But in the Spring of the Year, about the Beginning of *April*, you must remove the Boxes into their former Position; for now the young Plants will appear above-ground, which are impatient of too much Heat: besides, the Earth in the Boxes will dry too fast at this Season, if expos'd to the full Sun at Noon. You must

also observe at this Season to keep them intirely clear from Weeds, as also to refresh them gently with Water if the Season should prove dry; in this Place you should let the Boxes remain until the Beginning of *August*, at which Time you should prepare some Beds of the above-mention'd fresh light Earth, which must be levell'd very even: Then take the Earth out of the Boxes, together with the small Bulbs, and strew it equally over the Beds, covering it over about half an Inch thick with fine-sifted Earth: And if the Season should prove very hot and dry, you would do well to shade the Beds in the Middle of the Day from the great Heat of the Sun, and refresh them now-and-then with Water.

You must also observe to keep them intirely clear from Weeds: And if the following Winter should prove very cold, you must cover the Beds with Peas-haulm, or some other light Covering, to keep out the Frost, which would prejudice the Roots, if suffer'd to enter deep into the Ground (especially while they are so young:) but you must never let the Covering remain on in mild Weather, which would also be very injurious to them.

In *February*, when the hard Frosts are over, you should gently clear off the Earth upon the Surface of the Beds (which, during the Winter-season, will often have contracted a Mossiness) and sift a little fresh Earth equally over the Beds, which will greatly encourage the Roots: But in doing this, you must be very careful not to stir the Ground so deep as to injure the Roots: Nor should you defer doing it too late, lest the Shoots should be coming up, which, by this Operation, might be broken,

ken, and greatly hurt. And as the Season advances, so you must be careful to clear them from Weeds, and in dry Weather to water them; and in very hot Days, if you shade 'em from the Sun, it will be of great Service to them: but this need not be done 'till the Latter-end of *April*, or the Beginning of *May*, when the Season is sometimes very hot and dry.

When their Leaves are quite decay'd, you should stir the Surface of the Beds again (but do not go too deep) which will prevent the Weeds from growing very fast, and be of Service to the Roots; and in *September* you must sift some more fresh Earth over the Beds about half an Inch thick: and in Winter and Spring you must manage them as was directed for the preceding Year.

In *September* following these Roots will require to be transplanted to a greater Distance, when you must prepare some Beds of the same fresh light Earth, as was before directed, making them level; then take up the Roots, and transplant them into the Beds, placing them about eight Inches asunder, observing to put the Roots with their Buds uppermost, and about four Inches below the Surface.

This Work should be done when the Weather is moist; for if the Roots are transplanted in a very dry Season, and there doth not happen Rain soon after, they will take a Mouldiness, which many times rots them.

You must also observe (as was before directed) to keep the Beds intirely clear from Weeds: And in Winter, if the Frost should be very severe, you must cover them with Peas-haulm, to prevent the Roots from being injured thereby:

And in the Spring you should take off the Earth from the Surface of the Beds, as before, laying some fresh thereon, and so continue the Summer and Winter's Work, as before.

The second Year after being planted in these Beds, the strongest Roots will begin to flower; at which Time, if you observe any peculiar Varieties, you should put down a Stick by each of those Roots, to mark them; which may be taken up when their Leaves are decay'd, and remov'd into the Borders of the *Flower-Garden*, or transplanted into other Beds at a greater Distance, to encourage them to flower strong. But you can't be a Judge which of those will be good by their first Flowers, therefore you should never reject any of them until they have flower'd two or three Years; for, many times, some of these Flowers will make but a mean Appearance the first Year, and afterwards become fair handsome Flowers, when they have obtain'd Strength; so that you should suffer all such, as you are not assured of their Worth, to remain undisturb'd two or three Years, that you may be ascertain'd which of them are worth preserving; which should be remov'd into the *Flower-Garden* at a proper Season: but the ordinary ones may be rejected, or planted in shady outer Walks, where, tho' they are mean Flowers, yet they will appear well enough in such Places.

LILIUM CONVALLIUM; Lily of the Valley, or May Lily.

The Characters are;

The Flower consists of one Leaf, is shap'd like a Bell, and divided at the Top into six Segments: The Ovary becomes a soft globular Fruit, containing several round Seeds.

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The Species are;

1. LILIUM CONVALLIUM; *album*. C. B. P. Common Lily of the Valley, with white Flowers.

2. LILIUM CONVALLIUM; *flore rubente*. C. B. P. Lily of the Valley, with reddish Flowers.

3. LILIUM CONVALLIUM; *latifolium, flore pleno, variegato*. Tourn. Broad-leav'd Lily of the Valley, with a double variegated Flower.

There are some other Varieties of this Plant, which are preserv'd in some curious Botanick Gardens abroad, but these are all the Sorts I have observ'd in the *English* Gardens. The first Sort is very common in shady Woods in divers Parts of *England*. The second is a Variety of the first, differing only in the Colour of the Flower; which Difference it constantly maintains when cultivated in Gardens.

They delight in a moist shady Situation, where they will thrive exceedingly, and produce a large Quantity of Flowers. The best Time for transplanting these Roots is early in the Spring, just before they begin to shoot.

The Double Sort was brought from *Holland* some Years since; but whether it was obtain'd from Seeds originally, or found by Accident, I can't say. This may be propagated by parting the Roots in the Spring, in the same Manner as the former.

LILIUM PERSICUM; *vide* Frillaria.

LILIUM SUPERBUM; *vide* Methonica.

LIME-TREE; *vide* TILIA.

LIMON; The Lemon-Tree.

The Characters are;

It hath large stiff Leaves like the Citron, without any Appendage at the Bottom: The Flower consists of

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many Leaves, which expand in Form of a Rose: The Fruit is almost of an oval Figure, and divided into several Cells, in which are lodg'd hard Seeds surrounded by a thick fleshy Substance, which, for the most Part, is full of an acid Juice.

The Species are;

1. LIMON; *vulgaris*. Ferr. Hesp. The Common Lemon.

2. LIMON; *dulcis*. Ferr. Hesp. The Sweet Lemon.

3. LIMON; *acris*. Ferr. Hesp. The lesser Soure Lemon.

4. LIMON; *dulci medullâ, vulgaris*. Ferr. Hesp. The common Sweet Lemon.

5. LIMON; *Pyri effigie*. Ferr. Hesp. The Pear-shap'd Lemon.

6. LIMON; *Imperialis*. Ferr. Hesp. The Imperial Lemon.

7. LIMON; *Adami Pomum commune*. Ferr. Hesp. Lemon, commonly call'd Adam's Apple.

8. LIMON; *spineolus*. Ferr. Hesp. The Wild Lemon, *vulgô*.

9. LIMON; *striatus, vulgarior*. Ferr. Hesp. The Furrow'd Lemon.

10. LIMON; *citratus, altero factus*. Tourn. The Childing Lemon; *vulgô*.

11. LIMON; *qui Lima acris dicitur*. Ferr. Hesp. The Soure Lime.

12. LIMON; *qui Lima dulcis dicitur*. Ferr. Hesp. The Sweet Lime.

13. LIMON; *vulgaris, foliis ex luteo eleganter striatis*. The Gold-strip'd Lemon.

14. LIMON; *vulgaris, foliis ex albo variegatis*. The Silver-strip'd Lemon.

There are some other Varieties of these Trees in the curious Gardens abroad, from whence we may expect to be supply'd with them all, since there are every Year large Quantities of these Trees brought over from *Italy*, where the Gardeners are as fond of any new

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Kinds to supply their Customers with, as our Country-men are of new Sorts of Fruit. But since these Varieties are annually increas'd from Seeds, like other Fruits, so it would be needless to attempt an Account of them all, because in a very short Time many new Varieties may be produc'd.

The Fruit of the four first Sorts are generally brought over from *Lisbon* every Year in great Plenty, and are sold promiscuously in *London* in the *Winter* and *Spring*, as are great Numbers of the Trees, which are annually brought over from *Italy*.

The fifth, sixth, and seventh Sorts are preserv'd, for their Variety, in many curious Gardens; but the fifth is very uncommon in *England* at present.

The sixth is a very large beautiful Sort, and of an agreeable Flavour: This has produc'd very good Fruit in divers Gardens in *England*, which has been as well-tasted as any of those which are brought over from *Italy*.

The seventh Sort is somewhat tenderer than the other, and requires a warmer Situation in Winter; otherwise the Fruit is very subject to drop off at that Season.

The eighth Sort is commonly call'd the *Wild Lemon*, (though improperly) because it has many Thorns upon the Branches; but this will produce very fair Fruit in this Kingdom. The Flowers of this Kind are generally of a reddish or purplish Colour on the Outside before they open, but afterwards fade, and change to a paler. The Leaves of this are also of a very deep Green, and gently serrated upon their Edges.

The *Furrow'd Lemon* is in divers Gardens in *England*, where the

Fruit very often ripens well, and is chiefly kept for Variety, as differing from the Common Sort, in having deep Furrows in the Fruit; but it is not so good for Use, nor does the Fruit produce so much Juice as the Common Sort.

The *Childing Lemon* is also preserv'd as a Curiosity, the old Fruit commonly producing a young one from its Centre.

The two Sorts of *Limes* are likewise in many Gardens in this Kingdom; but these require the same Degree of Warmth as the *Shaddock Orange*, in order to produce Fruit; for if they are plac'd among *Orange-Trees*, the Fruit will fall away in Winter, and come to nothing.

The two variegated Sorts are preserv'd for their strip'd Leaves (which are greatly esteem'd by some Persons who are curious in collecting variegated Plants): But these are tenderer than the plain Sorts, and, if not duly attended in Winter, will be very apt to cast their Leaves, and appear very unsightly.

There is also another Sort, which produces Double Flowers; but this seems not to be very constant; for I have observ'd upon the same Tree, some Flowers Single, and others Double, at the same Time.

All these Sorts are propagated by budding or inarching them either on Stocks of *Lemons* or *Citrons* produc'd from Seeds; but they will not so readily unite on *Orange* Stocks; for which Reason the *Citrons* are preferable to either *Oranges* or *Lemons* for Stocks, as they do readily join with either Sort; and being of larger Growth, do cause the Buds of the other Sorts to shoot much stronger than if they were on Stocks of their own Kind. The Method for raising these Stocks, and the Manner of Budding them, being already

already exhibited under the Article of *Aurantium*, it would be superfluous to repeat it here.

The Culture of the *Lemon* being the same with that of the *Orange-Tree*, it would be also needless to repeat it here; therefore I shall only observe that the common *Lemons* are somewhat hardier than the *Oranges*, and will bring their Fruit to Maturity with us better than They will do, and require to have a greater Share of fresh Air in Winter; for which Reason they should always be placed nearer to the Doors or Windows of the Green-house: And as they generally produce stronger Shoots, so they require more Water to be given them than the *Orange*; but as to the tender Sorts, they must be treated with a little more Care, otherwise their Fruit will fall off in Winter, and come to nothing. These Things being fully exhibited before, I refer the Reader (as I hinted) to the Article *Aurantium*, where their Culture is fully set forth.

LIMONIUM; Sea-Lavender.

The Characters are;

It hath a fibrose Root: The Stalks are naked, and branched: The Cup of the Flower is long and tubulose, but expanded at the Top: The Flower in some Species consists of one Leaf, but in others of several, and is shap'd like a Clove-Gilli-flower: The Pointal, which arises out of the Flower-cup, becomes an oblong Fruit, wrapt up in the Flower-cup, as in an Husk.

The Species are;

1. LIMONIUM; *Maritimum, majus*. C. B. P. Common Great Sea-Lavender.

2. LIMONIUM; *Maritimum, majus, alterum, serotinum, Narbonense*. H. R. Par. Another large late flowering Sea-Lavender of Narbonne.

3. LIMONIUM; *Maritimum, minus, Olea folio*. C. B. P. Small Sea-Lavender, with an Olive-Leaf.

4. LIMONIUM; *Anglicum, minus, caulibus ramosioribus, floribus in spicis rarius sitis*. Raii. Hist. Lesser English Sea-Lavender, with branch'd Stalks, and Flowers seldom growing in a Spike.

5. LIMONIUM; *Orientale, plantaginifolio, floribus umbellatis*. T. Cor. Oriental Sea-Lavender, with Plantain Leaves and Flowers growing in an Umbel.

6. LIMONIUM; *peregrinum, foliis asplenii*. C. B. P. Foreign Sea-Lavender, with Spleen-wort Leaves.

7. LIMONIUM; *Siculum, lignosum, gallas ferens & non ferens*. Bocc. Rar. Woody Sicilian Sea-Lavender.

There are several other Species of this Plant, which are found upon the Sea-coasts of *Italy*, *Spain*, and the Southern Parts of *France*, but these here-mention'd are all the Sorts I have observ'd in the *English* Gardens. The first and fourth Sorts are found upon the Sea-Coasts in divers Parts of *England*, especially the first, which is the most common; the other being only found in some particular Places. The second and third Sorts are pretty common in the Southern Parts of *France*. The fifth Sort was found by Mons. *Tournefort* in the *Levant*. The sixth, which is the most beautiful of all the Sorts, was found by Mr. *Ray* in great Plenty in divers Parts of *Sicily*; and *Clusius* observ'd it at *Malaga*, and about *Cadiz*. The seventh Sort, which grows to the Stature of a Shrub, was found in *Sicily* by *Pere Boccone*, and by him figur'd and describ'd in his Book of *Rare Sicilian Plants*.

The five first mention'd Sorts are pretty hardy, and will endure the Cold

Cold of our ordinary Winters very well, provided they have a sandy Soil, and a warm Situation: These may be propagated by parting their Roots towards the latter End of *March*. When they are planted, which should be in a light sandy Soil, you must water and shade them until they have taken Root; after which, they will require no other Culture than to keep them clear from Weeds, and give them Water plentifully in dry Weather. In *July* these Plants will produce beautiful Spikes or Tufts of blue or Purple-colour'd Flowers, which will continue in Perfection a long Time; and if the Season proves favourable in Autumn they will ripen their Seed.

The sixth Sort is somewhat tenderer than the others, and must be preserv'd in Pots fill'd with fresh light Earth, and plac'd in the Green-house in hard Weather, otherwise the Cold of our Winters often destroys them: This Plant may be propagated as the former, but is not so apt to increase; for which Reason, the best Method is, to be furnish'd with good Seeds from Abroad, (for it never perfects its Seed in *England*), which, if sown upon a warm Border of light fresh Earth, will come up very well; and in the Summer, when the Plants have acquir'd sufficient Strength for Transplantation, they must be taken up and planted in Pots, placing them in the Shade until they have taken Root; after which, they may be expos'd to the open Air until *October*, when they must be remov'd into the Green-house, observing to place them where they may have as much free Air as possible in mild Weather: And during the Winter-season they must be frequently water'd; but you must

never give them too much at once, which is apt to rot their Roots, especially in that Season. You must also observe to pick off all decay'd Leaves, which, if suffer'd to remain on the Plants, very often infect them; and it being pretty nice in its Culture, it will often fail, upon a small Neglect of this Kind. This Plant produces its Flowers in *July* and *August*, and, many times, continues in Beauty the greatest Part of *September*.

The seventh Sort rises to be four or five Feet high, and hath slender woody Branches; from which, in *July* and *August*, are produc'd Spikes of small blue Flowers, which make a very handsome Appearance, (especially in a warm Season, when their Flowers open kindly) and continue in Beauty a long Time.

This Plant is propagated by planting some of the tender Cuttings in any of the Summer Months, in Pots fill'd with light sandy Earth, and plac'd in a moderate Hot-bed to facilitate their taking Root, and after they are rooted, they may be expos'd to the open Air until *October*; when they must be remov'd into a Green-house, placing them in a Situation where they may have as much free Air as possible in mild Weather: During the Winter-season, they should have frequent, but gentle Refreshings with Water: You must also observe to keep them clear from decay'd Leaves and Branches, which will infect the whole Plants upon which they are suffer'd to remain; and in the Summer-season they should be expos'd in some well-shelter'd Place amongst other Exotick Plants.

LINARIA; Toad-Flax.

The Characters are;

The Leaves are oblong, and produc'd alternately on the Branches; the

the Cup of the Flower consists of one Leaf, which is divided into five long acute Segments; the Flower, which consists of one Leaf, is of an anomalous, personated Figure, ending in a Tail behind, and in the Fore-part divided into two Lips, of which the Upper is cut into two or more Parts, and the Under into three; the Ovary (which rises from the Centre of the Flower-cup) becomes a roundish Fruit or Husk, divided into two Cells or Apartments, by an intermediate Partition, and full of Seeds, which are sometimes flat and border'd, sometimes corner'd and roundish, adhering to the Placenta.

The Species are;

1. LINARIA; *vulgaris, lutea, flore majore*. C. B. P. Common Yellow Toad-Flax, with a large Flower.

2. LINARIA; *purpurea, major, odorata*. C. B. P. Great Purple Sweet-smelling Toad-Flax.

3. LINARIA; *latifolia, Dalmatica, magno flore*. C. B. P. Broad-leav'd Dalmatian Toad-Flax, with a large Flower.

4. LINARIA; *latissimo folio, Lusitanica*. Tourn. Broad-leav'd Portugal Toad-Flax.

5. LINARIA; *Hispanica, procumbens, foliis glaucis, flore luteo, striato, labiis nigro-purpureis*. Spanish trailing Toad-Flax, with Sea-green Leaves, and yellow strip'd Flowers with purple Lips.

6. LINARIA; *Sicula, multicaulis, folio molluginis*. Bocc. Rar. Sicilian Toad-Flax, with many Stalks, and a Leaf of the White Lady's Bed-straw.

7. LINARIA; *triphylla, minor, lutea*. C. B. P. Small, three-leav'd yellow Toad-Flax.

8. LINARIA; *triphylla, minor, lutea, floris vexillo, & calcaris purpureo*. Boerh. Ind. Small, three-leav'd, yellow Toad-Flax, with the

Standard and Heel of a purple Colour.

The first of these Plants grows in great Plenty upon the Sides of dry Banks in most Parts of England, and is seldom cultivated in Gardens, for it is a very troublesome Plant to keep within Bounds, the Roots being very apt to spread underground, and rise at a great Distance from the Mother Plant, whereby it greatly injures whatever Plants stand near it. This is the Species mention'd in the Catalogue of Simples at the End of the College Dispensatory to be us'd in Medicine.

The second is a perennial Plant, which is often cultivated in Gardens: This produces fine Spikes of purple Flowers in June and July, and it being a very hardy Plant, growing in almost any Soil or Situation, should be admitted into every good Garden, where it may be planted in shady Situations, or upon the Middle of large Borders in the Pleasure-Garden; in which Place it will make an handsome Appearance, and continues a long Time in Flower.

This Plant is propagated by sowing the Seeds in the Spring, which will come up soon after; and the Plants must be transplanted out into Beds at the Distance of six or eight Inches; in which Beds they may remain until the Michaelmas following, (observing to keep them clear from Weeds): At which Time they should be transplanted into the Places where they are to remain for good, and will require no other Culture than only to keep them clear from Weeds; and when the Flower-stems advance in the Spring, they should be supported by Stakes, otherwise they are subject to be broken by strong Winds: They may also be propagated by parting

parting their Roots in Autumn; but as the Seed ripens very well, so it is the better Way to raise them from that.

The third and fourth Sorts are tenderer than the last, and should be planted in a dry Soil and a warm Situation, otherwise they are often destroy'd in Winter. These are propagated by Seeds in the same Manner as the former, as also by parting their Roots; but it is adviseable always to keep some of these Plants in Pots, that they may be remov'd into Shelter in the Winter, otherwise in hard Frosts they will be kill'd.

The fourth is the most beautiful Sort of them all; this produces very large Spikes of purple Flowers, which make a fine Appearance; but it seldom produces ripe Seeds in this Country, so that the Seeds must be obtain'd from Abroad, and the Plants propagated from Off-sets or Cuttings; which, if planted in the Spring, will take Root very well, whereby it may be maintain'd.

The fifth Sort was brought over from *Gibraltar* by *Sir Charles Wager*, *Anno 1727*, and hath since been communicated to several curious Persons: This Plant is easily propagated by parting the Roots, or planting Cuttings in any of the Summer Months, which if water'd and shaded will soon take Root, and may afterwards be planted in Pots fill'd with fresh, light, undung'd Earth, in which they will succeed much better than in a richer Soil; for if they are planted in a fine rich Earth, it causes them to grow very fast for a short Time, but they seldom fail to rot soon after. These must be remov'd into Shelter in Winter, where they must have as much free Air as possible in mild

Weather, and be only protected from severe Cold; so that if the Pots are plac'd under an Hot-bed Frame, it will be better than to place them in a Green-house; and I believe if some of the Plants were planted in a dry, rubbishy Soil under a warm Wall, they would endure abroad very well in our ordinary Winters.

The sixth, seventh, and eighth Sorts are annual Plants, which should be sown early in the Spring upon a Bed of light, fresh Earth; and when the Plants are come up about two Inches high, they should be transplanted into the Borders of the Flower-Garden, where they are to remain: These produce their Flowers in *June* and *July*, and their Seeds are ripe in *September*. The Seeds of these Plants may also be sown in Autumn, soon after they are ripe, under a warm Wall or Hedge, where they will endure the Cold of our ordinary Winters very well; and in the Spring they may be transplanted out into the Borders, where they are design'd to flower; And these autumnal Plants will grow much larger, and come to flower much sooner than those rais'd in the Spring, and from these you will always have good Seeds.

LINGUA CERVINA; Hart's-Tongue.

These Plants do commonly grow out from the Joints of old Walls and Buildings, where they are moist and shady, but are seldom cultivated in Gardens: There is a very great Variety of these Plants both in the *East* and *West-Indies*, but there are very few of them in *Europe*: They may be propagated by parting their Roots, and should have a moist Soil, and shady Situation.

LINUM; Flax.

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The Characters are;

The Leaves, for the most part, grow alternately on the Branches; the Cup of the Flower consists of one Leaf, is tubulous, and divided into five Parts at the Top; the Flower consists of five Leaves, which expand in Form of a Clove-Gilli-flower; the Ovary, which rises from the Center of the Flower-cup, becomes an almost globular Fruit, which is generally pointed, and compos'd of many Cells, in which are lodg'd many plain, smooth Seeds, which are blunt at one End, and generally sharp at the other.

The Species are;

1. LINUM; *sativum*. C. B. P. Manur'd Flax.

2. LINUM; *sativum, latifolium, Africanum, fructu majore*. Tourn. Broad-leav'd African manur'd Flax, with a large Fruit.

3. LINUM; *maritimum, luteum*, C. B. P. Yellow Maritime Flax.

4. LINUM; *sativum, humilius, flore majore*. Bobart. Dwarf manur'd Flax, with a larger Flower.

5. LINUM; *perenne, majus, caeruleum, capitulo majore*. Mor. Hist. Greater perennial blue Flax, with a large Head.

6. LINUM; *perenne, majus, caeruleum, capitulo minore*. Mor. Hist. Greater perennial blue Flax, with a smaller Head.

There are several Sorts of this Plant which are preserv'd in some curious Gardens of Plants for Variety Sake; but as they are of little Use or Beauty, so it would be needless to mention them in this Place.

The first Sort is that which is cultivated for Use in divers Parts of Europe, and is reckon'd an excellent Commodity; the right Tilling and Ordering of which is esteem'd a good Piece of Husbandry.

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This should be cultivated upon a rich Soil, that has not been plough'd for several Years, upon which Flax always makes the best Improvement; but as it draws greatly from the Soil, so it should not be sown two Years together upon the same Ground.

The Land must be well plough'd, laid flat and even, upon which the Seeds should be sown about the Middle of March, when the Weather is mild and warm: During the Spring you must carefully weed it; which if neglected, (especially in a moist Season) the Weeds will overgrow and destroy the Crop. There are some People who recommend the feeding of Sheep with Flax, when 'tis a good Height, and say, they will eat away the Weeds and Grass, and do the Flax good; and if they should lie in it, and beat it down, or flatten it, it will rise again the next Rain: But this must not be practis'd but in a moist Season, and upon a rich Soil, for if the Ground be poor, or the Spring dry, it will not rise again to any considerable Height.

The best Seed is that which comes from the East Country, and is known by the Name of *Riga Flax*; for if the *English* Seed be sown three or four times, it is very apt to degenerate: If the Seed be good, two Bushels will be enough to sow an Acre; but if it be but middling, there should be a greater Allowance: Toward the latter End of *July* the Flax will begin to ripen; when you must be careful that it grow not over ripe, therefore you must pull it up as soon as the Heads begin to change brown and hang downwards, otherwise the Seeds will soon scatter and be lost; so that the Pluckers must be nimble, and tie it up in Handfuls,

fuls, setting them upright till they be perfectly dry, and then Houe them: If the Flax be pull'd when it first begins to flower, it will be whiter and stronger than if it stand till the Seed is ripe, but then the Seed will be lost.

The Method of Watering, Piling, Braking, &c. being a particular Business, and foreign to my Design, I shall not pretend to give any Directions about it in this Place.

All the other Sorts of Flax may be cultivated (by such who have a Curiosity) by sowing their Seeds upon a Bed of fresh, rich, light Earth, in *March* or the Beginning of *April*; and when the Plants come up, they must be carefully weeded, which is all the Culture they require, and they will produce their Flowers and perfect their Seeds very well.

LINUM UMBILICATUM; *vide* Omphalodes.

LIQUID AMBER; *vide* Syrax.

LITHOSPERMUM; Gromwell, Gromill, or Graymill.

The Characters are;

The Cup of the Flower consists of one Leaf, which is cut almost to the Base into five long narrow Segments; the Flower, which is, for the most part, small, consists of one Leaf, is Funnel-shap'd, and spread open at the Top; the Pointal is encompass'd by four Embryo's, which become so many roundish hard polish'd Seeds.

The Species are;

1. LITHOSPERMUM; *majus, erectum*. C. B. P. Greater Upright Gromill.

2. LITHOSPERMUM; *perenne, procumbens, flore purpureo caruleo majore*. Mor. Hist. Trailing perennial Gromill, with a purple-blue Flower.

There are several other Sorts of this Plant, which are mention'd in Botanick Authors, but as they are

rarely cultivated in Gardens, I shall omit taking Notice of them in this Place. The first Sort here mention'd, is that which is order'd for Medicinal Uses: This grows in shady Lanes and uncultivated Places in divers Parts of *England*, and is seldom cultivated in Gardens. The second Sort is found wild in some Parts of *Wales*, but is less common than the former. These may be cultivated by sowing their Seeds soon after they are ripe, in a Bed of fresh Earth, allowing them at least a Foot Distance from each other, observing to keep them clear from Weeds, and they will thrive in almost any Soil or Situation.

LOAM is a common superficial Earth, that is a Mixture of Sand and Clay, commonly of a yellowish Colour, though there is some *Loam* that is blackish: Some call *Loam* the most common superficial Earth met with in *England*, without any Regard to the Portion it bears to Sand or Clay.

It is found, by Experience, that most Sorts of Plants will grow in it; and where-ever it is found, it appears to be a more beneficial Soil to Plants than any other. A Clay us'd in Grafting is also call'd *Loam*.

LOBUS ECHINATUS; Bonduc or Nicker-Tree.

The Characters are;

The Leaves are equally pinnated; the Flower consists of one Leaf, which is cut into many deep Segments, and is almost an anomalous Figure; from the Cup arises the Pistillum, which becomes a rough, prickly Pod, in which are contain'd one or two hard roundish Seeds.

The Species are;

1. LOBUS ECHINATUS; *fructu flavo, foliis rotundioribus*. H. L. The Yellow Nicker Tree.

2. LOBUS

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1. *LOBUS ECHINATUS*; *fructu caesio, foliis longioribus*. H. L. The Ash-colour'd Nicker, *vulgô*.

These two Plants are very common in *Jamaica*, *Barbados*, and all the *Caribbee Islands*, where they climb upon the Shrubs and Trees which grow near them: The Leaves, Branches, Stems, and every Part of them are greatly beset with Prickles, which render it very troublesome to pass between them where they grow pretty close.

They are preserv'd in the warmest Stoves, by way of Curiosity, in *England*, but have not as yet produc'd any Flowers with us, that I have seen. The Seeds of this Plant are often brought over from the *West-Indies*, but their Shells or Coverings are so very hard, as not to be easily broken; nor do they ever come up when sown upon a Hot-bed as other Seeds: The only Method by which I have been capable of raising these Plants, is, to put the fresh Seeds into a fresh Hot-bed of Tanner's-Bark, under the Bottom of a Pot, (in which there is a Plant growing) where, from the Heat of the Bark, and the Moisture which will gently pass through the Hole at the Bottom of the Pot, and being by the Bark there detain'd, the Shell of the Fruit will split, and the Seeds germinate in a short Time; then they may be taken up, and planted into Pots fill'd with light fresh Earth, and plung'd into the Tanner's-Bark, where they will come on apace, if constantly supply'd with Water: During the Winter-season they must be kept very warm, and often refresh'd with Water; but it must be given them by small Quantities each Time, for if they have too much Moisture given them at that Season, it is very apt to destroy

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them: In the Summer-time, when the Weather is warm, they will require a greater Share of Air, but they must never be set Abroad, even in the hottest Season, for they are too tender to bear the open Air in our Climate, so that they must be constantly preserv'd in the Stoves with *Papaws*, and other free-growing Plants which come from the same Country.

LONCHITIS; Rough Spleenwort.

The Characters are;

The Leaves are like those of the Fern, but the Pinnulae are ear'd at their Base: The Fruit also is like that of the Fern.

The Species are;

1. *LONCHITIS*; *aspera*. Ger. Rough Spleenwort.

2. *LONCHITIS*; *aspera, major*. Ger. *Emac.* Greater Rough Spleenwort.

The first of these Plants is very common in shady Woods, by the Sides of the small Rivulets in divers Parts of *England*: But the second Sort is not quite so common, and has been brought into several curious Botanick Gardens from the Mountains in *Wales*. There is also great Variety of these Plants in *America*, which at present are Strangers in the *European* Gardens. They are seldom cultivated but in Botanick Gardens, for the Sake of Variety, where they must have a moist Soil, and a shady Situation.

LOPPING: It is very observable, that most old Trees are hollow within; which does not proceed from the Nature of the Trees, but is the Fault of those who have the Management of them, who suffer the Tops to grow large before they lop them, as the *Ash*, *Elm*, *Horn-beam*, &c. and persuade themselves that they may have the more great

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great Wood ; but, in the mean Time, don't consider that the cutting off great Tops do endanger the Life of a Tree, or, at best, wound it so that many Trees decay more in their Bodies, than the yearly Tops come to; and at the same Time that they furnish themselves with more great Wood, they do it at the Loss of the Owner. And, indeed, though the *Horn-Beam* and *Elm* will bear great Tops when the Body is little more than a Shell, yet the *Ash*, if it comes to take Wet at the Head, very rarely bears more Top after the Body of the Tree decays : Therefore, if once these Trees decay much in the Middle, they will be worth little but for the Fire; so that if you find a Timber Tree decay, it should be cut down in Time, that the Timber be not lost.

The Lopping of young Trees, that is, at ten or twelve Years old at most, will preserve them much longer, and will occasion the Shoots to grow more into Wood in one Year, than they do in old Tops at two or three. Great Boughs ill taken off, often spoil many a Tree; for which Reason they should always be taken off close and smooth, and not parallel to the Horizon; and cover the Wound with Loam and Horse-dung mix'd, to prevent the Wet from entering the Body of the Tree.

When Trees are at their full Growth, there are several Signs of their Decay; as, the withering or dying of many of their top Branches; or if the Wet enters at any Knot; or they are anywise hollow, or discolour'd; if they make but poor Shoots; or if Wood-Peckers make any Holes in them.

All Sorts of Resinous Trees, or such as abound with a Milky Juice,

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should be lopp'd very sparingly; for they are very subject to decay when often cut. The best Season for Lopping these Trees is soon after *Bartholomew-tide*, at which Time they seldom bleed much, and the Wound is commonly heal'd over before the cold Weather comes on.

LOTUS; Bird's-foot Trefoil.

The Characters are;

It hath a papilionaceous Flower; the Ovary which rises out of the Flower-cup, afterwards becomes a Pod, sometimes distinguish'd as it were into Cells, by transverse Partitions, which are full of Seeds, for the most part roundish; to which may be added, the Leaves grow by threes, but have two Wings or little Leaves at the Origin of their Foot-stalks.

The Species are;

1. LOTUS; *villosus, altissimus, flore glomerato*. Tourn. The tallest hairy Birds-foot Trefoil, with a glomerated Flower.

2. LOTUS; *pentaphyllus, siliquosus, villosus*. C. B. P. Upright hoary Birds-foot Trefoil.

3. LOTUS; *πδλυκέρατ* ♂, *frutescens, Cretica, argentea, siliquis longissimis, propendentibus, rectis*. Mor. Hist. Shrubby Silver Birds-foot Trefoil of Crete, with long strait hanging Pods.

4. LOTUS; *hemorrhoidalis, humilior* ♂ *candidior*. Tourn. Lower and whiter Hæmorrhoidale Birds-foot Trefoil.

5. LOTUS; *angustifolius, flore luteo, purpureo, ex insulâ sancti Jacobi*. Hort. Amst. Narrow-leav'd Birds-foot Trefoil from the Island of St. James, with a purple yellow Flower.

6. LOTUS; *ruber, siliqua angulosa*. C. B. P. Red square-codded Birds-foot Trefoil, commonly called, Winged Peas.

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7. *Lorus*; *ruber*, *siliqua angulosa*, *foliis variegato*. Boerb. Ind. Red square-codded Birds-foot Trefoil, with a variegated Leaf.

8. *Lorus*; *siliquis ornithopodii*. C. B. P. Birds-foot Trefoil, with Pods like a Birds-foot.

The first of these Plants is by some supposed to be the *Cytisus* of *Virgil*; but with how much Justness I will not pretend to determine, since it is very difficult to ascertain many of his Plants; for the greatest Part of them are only translated from *Theocritus's* Greek into *Latin*, so that it may justly be supposed that *Virgil* himself did not know the Plants of which he wrote; and whoever has a Curiosity to know what the Plants there mention'd are, should diligently search for them in *Sicily* where *Theocritus* lived, and it is very probable many of them are still to be found.

This Plant dies to the Ground with us every Winter, and rises again the succeeding Spring, and when the Roots are strong, the Shoots will be four or five Feet high, and produce in great Plenty: If it be cut while young, the *Cows* are very fond of it; but *Horses* will not eat it, unless they are very hungry. The Roots when strong, will admit of the Shoots being cut three or four times in a Summer, for they put out again soon after they are cut, and grow very strong in a short time; but this Plant does not come up before *April* in our Country, and commonly dies down in *October*, so that if it were the best Fodder for Cattle, it could only be obtained in Summer, for I am afraid it will hardly be of any use when dried.

It may be propagated from the Seeds, which are generally produ-

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ced in great Plenty, and must be sown very thin in Rows, at about eighteen Inches asunder, the Beginning of *April*; and in *May*, when the Plants will be come up, the Ground should be hoe'd between the Rows, in order to destroy the Weeds, and the Plants cut up, where they are too thick (for they should be eight or ten Inches apart in the Rows at least) for though they will appear but weak at their first coming up, yet when their Roots have taken fast hold of the Ground, they will increase their Strength greatly; I have had a single Root of this Plant, which has been a Foot diameter over the Crown, and hath produced above a hundred Shoots at one Time.

You must also continuing hoeing the Ground from Time to Time as the Weeds are produced, which if permitted to over-grow the Plants while they are young, will certainly destroy them; so that the first Season they must be managed with great Care, but afterwards when the Plants have obtain'd more Strength, they will be capable of encountering the Weeds; though then the Ground between the Rows should be stirr'd with a Break-plough after the Crop is cut down, which will greatly promote its Growth.

This Plant delights in a dry, barren, gravelly Soil, on which it will resist the severest Cold of our Climate, and abide many Years.

It may also be propagated by planting Cuttings or Slips taken from the old Plants in *July*, when they have acquired a Hardness, which should be planted in a moist, cloudy Season, or water'd and shaded, and in a short Time they will take Root; but as this

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is difficult to perform when a Quantity is design'd, so the better Way is to propagate it by Seeds.

The second, third, fourth and fifth Sorts are preserved in Gardens as Curiosities; these are impatient of much Cold, and must therefore be planted in Pots, and housed in Winter, otherwise they are often destroy'd in our Country, especially the fifth, which is much the tenderest Plant of all the Sorts: These may be all propagated by sowing their Seeds upon a moderate Hot-bed in the *Spring*, and when the Plants are come up, they must be transplanted either upon another moderate Hot-bed, or into Pots, and plung'd into a Hot-bed, to promote their taking Root, after which in *May* they should be removed into the open Air, where they must be placed in some well-shelter'd Situation, amongst other exotick Plants, in which Place they may remain until the Middle or End of *October* following, when they must be removed into the Green-house, observing to place them where they may have as much free Air as possible in mild Weather; for if they are kept too closely shut up, or stand under the Branches of other Trees or Plants, they are very apt to draw very weak, and decay soon after; they must also be often refresh'd with Water, but it should not be given them in Winter in too great Quantities, for that will rot their Roots, especially of the fifth Sort, which, as I before said, is the tenderest: In the *Spring* they should be inured very early to the open Air, into which they should always be remov'd at the Beginning of *May*, or earlier, according as the Season proves favourable.

These may also be propagated by planting Cuttings, in any of the Summer Months, into a Bed of light Earth, observing to water and shade them until they have taken Root; after which they may be planted into Pots fill'd with light fresh Earth, and must be managed as was directed for the Seedling Plants. They all produce their Flowers in *June*, *July*, and *August*, and most of them ripen their Seeds very well in *England*: But the fifth Sort, which is the most rare, and produces the handsomest Flowers, seldom perfects Seeds with us, so that it must be always propagated from Cuttings; and in Winter must be placed somewhat warmer than the other Sorts, tho' not too near other Plants; and should be every Year renew'd from Cuttings; for the old Plants are very subject to decay in Winter. The sixth Sort is an annual Plant, which, by many People, is sown here and there, upon the Borders of the Flower-Garden, with other small Annuals, amongst which it makes a pretty Variety.

The Flowers of this Plant (which are in Form of a *Pea-blossom*) are of a deep-red Colour, and are succeeded by Pods with four Angles or Wings (which occasion'd their being call'd *Wing'd Peas*) containing several hard round Seeds.

It is easily propagated by sowing the Seeds in *March* or *April* upon the Borders where they are to remain; for they do not thrive so well when transplanted: And they will require no farther Care than only to keep them clear from Weeds. In *June* they will begin to flower, and continue till *August*, when their Seeds will ripen soon after.

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The seventh Sort is only a Variety of the sixth, from which it differs in having a variegated Leaf; this Difference it commonly retains from Seeds, which is what few other Plants will do. This may be propagated as the former.

The eighth Sort is only preserv'd in some Gardens, more for the Oddness of its Pods (which very much resemble a Bird's Foot) than for any particular Beauty of the Plant: But in a large Garden it may be admitted, for the sake of Variety. This may be propagated in the same Manner as the two former, and is also annual, as they are.

LOTUS ARBOR; *vide* Celtis.

LOVE APPLE; *vide* Lycopersicon.

LUNARIA; Moon-wort, Satten-Flower, or Honesty.

The Characters are;

The Flower consists of four Leaves, which expand in Form of a Cross: The Ovary (which rises in the Centre of the Flower) becomes a compress'd perfectly smooth Fruit, divided, as it were, into two Cells by an intermediate Partition, to which adhere the parallel and membranous Valves, and fill'd with Seeds, which have commonly a broad Border, and are shap'd like a Kidney.

The Species are;

1. LUNARIA; *major, siliquâ rotundiore. J. B.* Greater Moon-wort, with round Pods, commonly call'd Honesty, or White Sattin.

2. LUNARIA; *major, siliquâ longiore. J. B.* Greater Moon-wort, with a longer Pod.

3. LUNARIA; *major, perennis, siliquâ rotundiori, flore albo. Tourn.* Greater perennial Moon-wort, with a rounder Pod, and a white Flower.

4. LUNARIA; *Leucoji folio, siliquâ oblongâ majori. Tourn.* Moon-

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wort, with a Stock-July-flower Leaf, and a large oblong Pod.

5. LUNARIA; *fruticosa perennis, incana, Leucoji folio. Tourn.* Shrubby perennial Moon-wort, with a Stock-July-flower Leaf.

6. LUNARIA; *Orientalis, Leucoji folio incano, lutea patula. Jussieu.* Yellow spreading Eastern Moon-wort, with a Stock-July-flower Leaf.

7. LUNARIA; *perennis lutea, folio Leucoji, ramis expansis. Vail.* Branching yellow perennial Moon-wort, with a Stock-July-flower Leaf.

There are some other Varieties of this Plant, which are preserv'd in curious Botanick Gardens: But those here mention'd are the best worth cultivating, for their Beauty.

The first of these Plants is very common in most old Gardens in England, and is commonly known by the Name of Honesty, or White Satten: It requires very little Culture, and should be sown soon after the Seeds are ripe in Autumn, upon a Bed or Border of common Earth, in almost any Situation (provided it be not under the Dripping of Trees) in which Place they should be suffer'd to remain; for they seldom thrive well if transplanted; and in May following they will produce Flowers, and the Seeds will ripen in August. The Seed-vessels of this Plant, when they are full ripe, become very transparent, and of the Appearance of White Satten, at which Time the Branches are cut off and dry'd; after which, they are preserv'd to place in the Chimnies of Halls and large Rooms, where they appear very agreeable.

The other Sorts may be all propagated in the same Manner as the former, with this Difference, *viz.* That as they are somewhat tender,

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ret, so they should have a warmer Situation, otherwise they are subject to be destroy'd in very cold Winters: They should also have a dry Soil, which should be fresh, but not dung'd; for if the Soil be too rank, they often canker and decay, especially in wet Seasons.

These Plants are all of them pretty Varieties in large Gardens where there is Room: But they are seldom cultivated in small Places, especially the two first Sorts, which grow pretty large, and take up too much Room. Their Flowers are not very beautiful: But for the Oddness of their Seed-vessels, as also the different Appearances of the Plants, they may be admitted.

The third, fifth, and sixth Sorts are perennial Plants, which may be propagated by planting Cuttings of any of them in the Summer Months, in a shady Border of light fresh Earth, observing to water them until they have taken Root; after which, they may be remov'd into the Places where they are to remain, and must be treated as those Plants which were rais'd from Seeds.

LUPINUS; Lupine.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards turns into a Pod, that is fill'd with either plain or spherical Seeds. To which may be added, the Leaves grow like Fingers upon the Footstalks.

The Species are;

1. LUPINUS; *sylvestris, purpureo flore, semine rotundo vario.* J. B. Wild Lupine, with a purple Flower, and round variegated Seed, commonly call'd The Lesser Blue Lupine.

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2. LUPINUS; *angustifolius, caruleus elatior.* Raii Hist. Narrow-leav'd Taller Blue Lupine.

3. LUPINUS; *sylvestris, flore luteo.* C. B. P. The common Yellow Lupine.

4. LUPINUS; *peregrinus, major, vel villosus caruleus major.* C. B. P. Foreign Greater Hairy Lupine, with a large blue Flower, commonly call'd The Great Blue Lupine.

5. LUPINUS; *peregrinus, major, flore incarnato.* H. L. Foreign Greater Lupine, with a Flesh-colour'd Flower, commonly call'd The Rose Lupine.

6. LUPINUS; *fativus, flore albo.* C. B. P. Garden or Manured Lupine, with a white Flower.

7. LUPINUS; *caruleus, minor, perennis, Virginianus, repens.* Mor. Hist. Smaller Perennial Creeping Blue Lupine of Virginia.

There are several other Varieties of this Plant, which are preserv'd in some curious Botanick Gardens, that differ chiefly in the Colour and Size of their Flowers and Fruit; but those here mention'd are such as generally are preferr'd, for the Beauty of their Flowers, for which alone they are propagated in the English Gardens.

The first Sort is very common in every Garden, being sown in the Borders of the Flower-Garden, with other hardy Kinds of annual Plants, which do not require the Assistance of a Hot-bed to bring them forward. The Seeds of this, and the common Yellow and White Lupines, are very common at every Seed-shop, where they are generally sold at a very reasonable Price. These Seeds may be sown in April, May, and June, in order to continue a Succession of their Flowers through the Summer.

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They must be sown where they are to remain, for they seldom do well if transplanted: They love a light Soil, not too rich or moist; in both which they are very subject to rot, before they perfect their Seeds.

These produce their Flowers successively in *June*, *July*, and *August*, according to the Time of their being sown, and do commonly grow about two Feet high; so that if they are rightly dispos'd amongst other annual Plants of the same Growth in Borders, they make an agreeable Variety. The Seeds of these Plants should always be sown in dry Weather, for if there should happen to be much Wet soon after they are put into the Ground, it commonly rots them. The blue and white Sorts have no Scent, but the yellow has a very agreeable Odour, for which it is commonly preferr'd by most People to the others.

The narrow-leav'd, tall, blue *Lupine* is not so common in *England* as the other Sorts, tho' in *Italy* and *Spain* it is one of the most common: In the former of which Places it is sown to improve the Ground which is design'd for Vineyards; where, when the *Lupines* are in Flower, they cut them down, and plough 'em into the Ground as Manure: Or, if they have not Time enough to do this, they parboil the Seeds to prevent their growing, and sow them upon the Ground (allowing sixteen Bushels to an Acre) and plough them in; so that in these Countries it is a valuable Plant.

The fourth and fifth Sorts are still more rare than any of the former, and only to be found in some curious Gardens (especially the fourth, which was formerly

very common, but is now almost lost amongst us:) These Plants do grow three Feet high, and spread out into many Branches, which are furnish'd with fine Spikes of large Flowers, which make a handsome Appearance, and continue a long Time in Beauty. The Seeds of these Plants should be sown very early in the *Spring*, upon a warm dry Border, where they must remain to flower, for if they are sown late, they seldom perfect their Seeds with us; therefore the better Way is to sow them in *August*, under a warm Wall or Hedge, where the Plants will come up, and endure the Cold of our ordinary Winters very well: And these Plants will flower earlier the succeeding *Summer*, and never fail to produce ripe Seeds, whereas those sown in the *Spring* do very often miscarry.

The seventh Sort is an abiding Plant, which grows in great Plenty in *America*; from whence the Seeds have been brought into *England*, where it thrives very well, provided it be suffer'd to remain in the Place where it was sown, for the Roots of this Plant commonly run very deep into the Ground, which by removing are commonly broken, after which the Plant seldom does well. This should be sown on a light dry Soil, in which it will thrive very well, and continue several Years, producing fine Spikes of blue Flowers; but this Sort rarely perfects its Seeds in this Country.

LUPULUS; The Hop.

The Characters are;

It hath a creeping Root; the Leaves are rough, angular, and conjugated; the Stalks do climb and twist about whatever is near them; the Flowers are Male and Female

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on different Plants; the Male Flowers consist of a Calix divided into five Parts, which surrounds the Stamina, but has no Petals to the Flower; the Female Plants have their Flowers collected into squamose Heads, which grow in Bunches; from each of the leafy Scales is produc'd an horned Ovary, which becomes a single roundish Seed.

The Species are;

1. LUPULUS; *mâs.* C. B. P. The Male Hop, commonly call'd, The Wild Hop.

2. LUPULUS; *fœmina.* C. B. P. The Female or manur'd Hop.

Of this last Sort, the People who cultivate them, reckon three different Varieties; as first, The long and square Garlick Hop, the long White Hop, and the Oval Hop; all which are indifferently cultivated in England: But of the Male Hop, there has been no Notice taken of any different Varieties. This Sort grows wild in Hedges in divers Parts of England, but is never cultivated, as being of no Use.

There being the greatest Plantation of Hops in Kent that are in any County in England, it is very probable that their Method of planting and ordering them should be the best.

As for the Choice of their Hop-Grounds, they esteem the richest and strongest Grounds as the most proper; they chuse a warm dry Soil, that has a good Depth of hazel Mould, and if it be rocky within two or three Feet of the Surface, the Hops will prosper well, but they will by no means thrive on a stiff Clay, or spongy wet Land.

If it may be, chuse a Piece of Meadow or Lay-Ground to plant Hops on, such as has not been till'd or sown for many Years, or an

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old decay'd Orchard; for Land that is worn out by long bearing of Corn will require abundance of Dung to bring it into any tolerable Condition to bear a Crop of Hops.

They accounting new Land best for Hops, the Kentish Planters plant their Hop-Gardens with Apple-trees at a large Distance, and with Cherry-trees between; that when the Land hath done its best for Hops, which they reckon it will in about ten Years, the Trees may begin to bear: The Cherry-trees last about thirty Years; and by that Time the Apple-trees are large, they cut down the Cherry-trees.

The Essex Planters account a moory Land the properest for Hops, tho' there are several other Sorts of Soil that are esteem'd very good.

Some account that Land that has a rosselly Top, and a brick-earthly Bottom, the best: A true Rossel or light Land is what they generally plant in, whether it be white or black.

Moory Land is of different Sorts; some being fix'd and heavy, so as to crack in Summer; and some so light, that in dry Seasons it will blow away with the Wind; and some are of a middle Consistence, being compos'd of both.

These Moors, for Goodness and Value, are according to the Nature and Goodness of the Soil that is underneath them; which being flung up upon the Surface, will make a very good Mixture, it being best to fling the under Soil downward for Hops, because they naturally root downwards, sometimes four or five Yards deep, and therefore the deepest and richest Soil is best for them.

Few are acquainted with the Value of Moors, because they do not

not search into the Bottom of them, by reason of the Expensiveness of doing it, and the Difficulty of carrying off the Water.

If the Land be moist, it ought to be laid up in high Ridges, and to be well drain'd, and the Drain kept clear and open, especially in Winter, that the Water do not rot, or too much chill the Roots.

If the Land be sour, or cold, it will be very much help'd by burning it; and if the Haulm and Strings of the *Hops* be burnt every Year, and some of the Paring or Sides of the Garden or Earth be laid on them as they burn, and then more Haulm be laid over that, and so continued Layer upon Layer, it will make an excellent Compost to make the Hills with.

As to the Situation of a *Hop-Ground*, one that inclines to the South or West is the most eligible; but if it be expos'd to the North-East or South-West Winds, there should be a Shelter of some tall Trees at a Distance, because the North-East are apt to nip the tender Shoots in the Spring, and the South-West frequently break and blow the Poles at the latter End of the Summer, and very much endanger the *Hops*.

Hops require to be planted in an open Situation, that the Air may freely pass round and between them, to dry up and dissipate the Moisture, whereby they would not be so subject to Fire-blasts, which often destroy the Middles of large Plantations, while the Outslides remain unhurt.

As for the Preparation of the Ground for Planting, it should, the Winter before, be plough'd and harrow'd even; and then lay upon it in Heaps a good Quantity of fresh, rich Earth, or well-rotted Dung and

Earth mix'd together, sufficient to put half a Bushel in every Hole to plant the *Hops* in, unless the natural Ground be very fresh.

Then lay a Line across it, from the Hedge, in which Knots have been ty'd, at the Distance you design your *Hop-hills* to be at, about eight or nine Feet Distance the whole Length of the Ground, and place a sharp pointed Stick at every Knot; then lay aside the Line, and with two forked Sticks of about eight or nine Feet long, you may from that first Row set out the whole Ground, by applying the two Forks to two of the Sticks which were first set up, and placing another Row at the Ends where the forked Sticks meet triangularwise: Then you should dig a Hole at every Stick about a Foot and a half wide, and fill it full of the good Earth you brought in.

If you plough the Ground with Horses between the Hills, it will be best to plant them in Squares Checquerwise, but the *Quincunx* Form is the most beautiful, and it will also be better for the *Hop*: But if the Ground be small, that it may be done with the Breast-Plough or Spade, it will do very well; but which Way soever you make use of, a Stake should be stuck down at all the Places where the Hills are to be made.

Persons ought to be very curious in the Choice of the Plants and Sets as to the Kind of *Hop*; for if the *Hop-Garden* be planted with a Mixture of several Sorts of *Hops*, that ripen at several Times, it will cause a great deal of Trouble and be a great Detriment to the Owner.

The two best Sorts are the white and the grey Bind; the latter is a large square *Hop*, more hardy, and

is the more plentiful Bearer, and ripens later than the former.

There is also another Sort of the white Bind, which ripens a Week or ten Days before the common; but this is tenderer, and a less plentiful Bearer: But it has this Advantage, it comes first to Market.

But if three Grounds, or if three distant Parts of one Ground be planted with these three Sorts, there will be this Conveniency, that they may be pick'd successively as they become ripe.

The Sets ought to be procur'd out of Grounds that are intirely of the same Sort you would have; they should be five or six Inches long, with three or more Joints or Buds on them, all the old Bind and hollow Part of the Set being cut off.

If there be a Sort of *Hop* you value, and would increase Plants and Sets from, the superfluous Binds may be laid down when the *Hops* are ty'd, cutting off the Tops, and burying them in the Hills; or when the *Hops* are dress'd, all the Cuttings may be sav'd, and laid in Rows in a Bed of good Earth, for almost every Part will grow, and become a good Set the next Spring.

Some have try'd to raise a *Hop-Ground* by sowing Seeds; but that turns to no Account, because that Way is not only tedious, but the *Hops* so produc'd are commonly of different Kinds, and many of them wild and barren.

As to the Seasons of planting *Hops*, the *Kentish* Planters best approve the Months of *October* and *March*, both which succeed very well; but the common Sets are not to be had in *October*, unless from some Ground that is to be digged up and destroy'd; and likewise there is some Danger, that the Sets may be rotted

if the Winter proves very wet: But the most usual Time of procuring them is in *March* when the *Hops* are cut and dress'd.

As to the Manner of planting the Sets, you should put five good Sets in every Hole with a Setting-stick; one is to be plac'd in the Middle, and the rest round about, sloping, the Tops meeting at the Center: They must stand even with the Surface of the Ground; let them be press'd close with the Hand, and cover'd with fine Earth, and a Stick should be plac'd on each Side the Hill to secure it.

The Ground being thus planted, all that is to be done more that Summer, is to keep the Hills clear from Weeds, and to dig up the Ground about the Month of *May*, and to gather up the Stones, if more are turn'd up by digging, to raise a small Hill round about the Plants: And in *June*, you must twist the young Binds or Branches together into a Bunch or Knot, for if they are ty'd up to small Poles the first Year, in order to have a few *Hops* from them, it will not countervail the weakning of the Plants.

A Mixture of Compost or Dung being prepar'd for your *Hop-Ground*, the best Time for laying it on, if the Weather proves dry, is about *Michaelmas*, that the Wheels of the Dung-Cart may not injure the *Hops*, nor furrow the Ground: If this be not done then, you must be oblig'd to wait till the Frost has harden'd the Ground, so that it will bear the Dung-Cart: And this is also the Time to carry on your new Poles, to recruit those that are decay'd, and to be cast out every Year.

If you have good Store of Dung, the best Way will be to spread it in

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in the Alleys, all over the Ground, and to dig it in the Winter following: The Quantity they will require, will be forty Loads to an Acre, reckoning about thirty Bushels to the Load.

If you have not Dung enough to cover all the Ground in one Year, you may lay it on one Part one Year, and on the rest in another, or a third, for there is no Occasion to dung the Ground after this manner oftener than once in three Years.

Those who have but a small Quantity of Dung, usually content themselves with laying on about twenty Loads upon an Acre every Year; this they lay only on the Hills, either about *November*, or in the Spring, which last some account the best Time, when the *Hops* are dress'd, to cover them after they are cut; but if it be done at this Time, the Compost or Dung ought to be very well rotted and fine.

As to the dressing of the *Hops*: When the *Hop-Ground* is dug in *January* or *February*, the Earth about the Hills, and very near them, ought to be taken away with a Spade, that you may come the more conveniently at the Stock to cut it.

About the End of *February*, if the *Hops* were planted the Spring before, or if the Ground be weak, they ought to be dress'd in dry Weather; but else, if the Ground be strong, and in Perfection, the Middle of *March* will be a good Time; and the latter End of *March*, if it be apt to produce over-rank Binds, or the Beginning of *April* may be soon enough.

Then having, with an Iron Picker, clear'd away all the Earth out of the Hills, so as to make the Stock

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bare to the principal Roots, with a sharp Knife you must cut off all the Shoots which grew up with the Binds the last Year; and also all the young Suckers, that none be left to run in the Alley, and weaken the Hill. It will be proper to cut one Part of the Stock lower than the other, and also to cut that Part low that was left highest the preceding Year: By pursuing this Method, you may expect to have stronger Binds, and also to keep the Hill in good Order.

In dressing those *Hops* that have been planted the Year before, you ought to cut off both the dead Tops and the young Suckers which have sprung up from the Sets, and also to cover the Stocks with a Hive with fine Earth a Finger's Length in thickness.

About the Middle of *April* the *Hops* are to be pol'd, when the Shoots begin to sprout up; the Poles must be set to the Hills deep into the Ground, with a square Iron Pitcher or Crow, that they may the better endure the Winds; three Poles are sufficient for one Hill: These should be plac'd as near the Hills as may be, with their bending Tops turn'd outwards from the Hill, to prevent the Binds from intangling, and a Space between two Poles ought to be left open to the South to admit the Sun-beams.

The Poles ought to be in Length sixteen or twenty Feet, more or less, according as the Ground is in Strength; and great Care is to be taken not to over-pole a young or weak Ground, for that will draw the Stock too much and weaken it: If a Ground be over-poled, you are not to expect a good Crop from it, for the Branches which bear the *Hops* will grow very little till the Binds have over-reach'd the Poles, which

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which they cannot do when the Poles are too long ; two small Poles are sufficient for a Ground that is young.

If you wait till the Sprouts or young Binds are grown to the Length of a Foot, you will be able to make a better Judgment where to place the largest Poles ; but if you stay till they are so long as to fall into the Alleys, it will be injurious to them, because they will intangle one with another, and will not clasp about the Pole so readily.

Maple or *Aspen* Poles, are accounted the best for *Hops*, on which they are thought to prosper best, because of their Warmth ; or else, because the climbing of the *Hop* is furthered by means of the Roughness of the Bark. But for Lastingness, *Aspen* or *Willow* Poles are preferable ; but *Chestnut* Poles are the most durable of all.

If after the *Hops* are grown up, you find any of them have been under-poled, taller Poles may be placed near those that are too short to receive the Binds from them.

As to the Tying of *Hops*, the Buds that do not clasp of themselves to the nearest Pole when they are grown to three or four Feet high, must be guided to it by the Hand, turning them to the Sun, whose Course they will always follow : They must be bound with wither'd Rushes, but not so close as to hinder them from climbing up the Pole.

This you must continue to do 'till all the Poles are furnish'd with Binds, of which two or three are enough for a Pole ; and all the Sprouts and Binds that you have no occasion for are to be pluck'd up : But if the Ground be young, then none of these useless Binds should be pluck'd

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up, but should be wrapt up together in the Middle of the Hill.

When the Binds are grown beyond the Reach of your Hands, if they forsake the Poles, you should make Use of a Stand-Ladder in tying them up.

Some advise, that if the Binds be very strong, and over-grow the Poles very much, to strike off their Heads with a long Switch, to increase their branching below.

Towards the Latter-end of *May*, when you have made an end of tying them, the Ground must have the Summer Digging : This is done, by casting up with the Spade some fine Earth into every Hill ; and a Month after this is done, you must pare the Alleys with a Shovel, and make the Hills up to a convenient Bigness.

It is not at all to be doubted but that a thorough Watering would be of very great Advantage to *Hops* in a hot dry Summer : But it is so much Charge and Trouble to do this, that unless you have a Stream at Hand to flow the Ground, it is scarce practicable.

When the *Hops* blow, you should observe if there be any wild barren Hills among them, and mark them, by driving a sharpen'd Stick into every such Hill, that they may be digg'd up and replanted.

Hops, as well as other Vegetables, are liable to Distempers and Disasters, and, among the rest, to the Fen.

The Reverend Mr. *Hales*, in his excellent Treatise of *Vegetable Statics*, treating of *Hops*, gives us the following Account of the State of *Hops* in *Kent*, in the Year 1725, that he receiv'd from Mr. *Austin* of *Canterbury*, which is as follows :

In Mid-*April* not half the Shoots appear'd above-ground ; so that the Planters

Planters knew not how to plant them to the best Advantage.

This Defect of the Shoot, upon opening the Hills, was found to be owing to the Multitude and Variety of Vermin that lay preying upon the Roots; the Increase of which, was imputed to the long and almost uninterrupted Series of dry Weather for three Months before: Towards the End of *April* many of the *Hop-Vines* were infested with Flies.

About the 20th of *May* there was a very unequal Appearance, some Vines being run seven Feet, others not above three or four; some just ty'd to the Poles, and some not visible: And this disproportionate Inequality in their Size continu'd thro' the whole Time of their Growth.

The Flies now appeared upon the Leaves of the forwardest Vines, but not in such Numbers here, as they did in most other Places. About the Middle of *June* the Flies increas'd, yet not so as to endanger the Crop; but in distant Plantations they were exceedingly multiply'd, so as to swarm towards the End of the Month.

June 27th some Specks of Fen appear'd: From this Day to the 9th of *July* was very dry Weather. At this Time, when it was said that the *Hops* in most Parts of the Kingdom look'd black and sickly, and seem'd past Recovery, ours held it out pretty well, in the Opinion of the most skilful Planters.

The great Leaves were indeed discolour'd, and a little wither'd, and the Fen was somewhat increas'd. From the 9th of *July* to the 23d the Fen increas'd a great deal; but the Flies and Lice decreas'd, it raining much daily. In a Week more, the Fen, which seem'd to

be almost at a Stand, was considerably increas'd, especially in those Grounds where it first appeared.

About the Middle of *August* the Vines had done growing both in Stem and Branch; and the forwardest began to be in the Hop, the rest in Bloom: The Fen continu'd spreading where it was not before perceiv'd; and not only the Leaves, but many of the Burrs were also tainted with it.

About the 20th of *August* some of the *Hops* were infected with the Fen, and whole Branches corrupted by it. Half the Plantations had pretty well escap'd hitherto, and from this Time the Fen increas'd but little: But several Days Wind and Rain in the following Week so distorted them, that many of them began to dwindle, and at last came to nothing; and of those that then remain'd in Bloom, some never turn'd to *Hops*; and of the rest which did, many of them were so small, that they very little exceeded the Bigness of a good thriving Burr.

We did not begin to pick till the 8th of *September*, which is eighteen Days later than we began the Year before: The Crop was little above two hundred on an Acre round, and not good. The best *Hops* sold this Year at *Way-Hill* for sixteen Pounds the Hundred.

The Reverend Mr. *Hales*, in his aforesaid Treatise, gives us an Account of the following Experiment that he made on *Hop-Vines*: He tells us, That at *July* he cut off two thriving *Hop-Vines* near the Ground, in a thick, shady Part of the Garden, the Pole still standing; he stript the Leaves off from one of these Vines, and set their Stems in known Quantities of Water in little Bottles; that with Leaves imbib'd in

in a twelve Hours Day four Ounces, and that without Leaves three-fourths of an Ounce.

He took another *Hop-Pole* with its Vines on it, and carry'd it out of the *Hop-Ground* into a free and open Exposure; these imbib'd and perspir'd as much more as the former in the *Hop-Ground*: Which is, doubtless, the Reason why the *Hop-Vines* on the Outfides of Gardens, where they are most expos'd to the Air, are short and poor, in comparison of those in the Middle of the Ground, *viz.* because being much dry'd, their Fibres harden sooner, and therefore they cannot grow so kindly as those in the Middle of the Ground, which, by Shade, are always kept moister, and more ductile.

The same curious Author proceeds as followeth: Now there being 1000 Hills in an Acre of *Hop-Ground*, and each Hill having 3 Poles, and each Pole 3 Vines, the Number of Vines will be 9000, each of which perspiring 4 Ounces, the Sum of all the Ounces perspired by an Acre in 12 Hours Day will be 36000 Ounces = 15750000 Grains = 62007 Cube Inches, or 220 Gallons; which divided by 6272640, the Number of square Inches in an Acre, it will be found that the Quantity of Liquor perspir'd by all the *Hop-Vines* will be equal to an Area of Liquor as broad as an Acre, and $\frac{1}{181}$ Part of an Inch deep, besides what evaporated from the Earth.

And this Quantity of Moisture in a kindly State of the Air, if daily carry'd off, is a sufficient Quantity to keep the *Hops* in an healthy State: But in a rainy moist State of Air, without a due Mixture of dry Weather, too much Moisture hovers about the *Hops*, so

as to hinder, in some measure, the kindly Perspiration of the Leaves, whereby the stagnating Sap corrupts, and breeds mouldy Fen, which often spoils vast Quantities of flourishing *Hop-grounds*.

This was the Case in the Year 1723, when for ten or fourteen Days almost continual Rains fell, about the latter half of *July*, after four Months dry Weather; upon which the most flourishing and promising *Hops* were all infected with Mould or Fen in their Leaves and Fruit, while the then poor and unpromising *Hops* escap'd, and produc'd Plenty; because they being small, did not perspire so great a Quantity as others; nor did they confine the perspired Vapour, so much as the large thriving Vines did in their shady Thickets.

The Planters observe, than when a Mould or Fen has once seiz'd any Part of the Ground, it soon runs over the Whole, and that the Grass and other Herbs under the *Hops* are infected with it; probably, because the small Seeds of this quick-growing Mould, which soon come to Maturity, are blown over the whole Ground; which spreading of the Seed, may be the Reason why some Grounds are infected with Fen for several Years successively, *viz.* From the Seeds of the last Year's Fen. Might it not then be advisable, to burn the Fenny *Hop-Vines* as soon as the *Hops* are pick'd, in hopes thereby to destroy some of the Seed of the Mould?

Mr. *Austen* of *Canterbury* observes Fen to be more fatal to those Grounds, that are low and shelter'd, than to the high and open Grounds; to those that are shelving to the North, than to those shelving to the South; to the

the Middle of Grounds, than to the Outfides; to the dry and gentle Grounds, than to the moist and stiff Grounds.

This was very apparent throughout the Plantations where the Land had the same Workmanship and Help bestow'd upon it, and was wrought at the same Time. But if in either of these Cases there was a Difference, it had a different Effect; and the low and gentle Grounds, that lay neglected, were then seen less distemper'd than the open and moist which were carefully managed and look'd after.

The Honey-Dews are observ'd to come about the 11th of *June*, which by the Middle of *July* turn the Leaves black, and make 'em sink.

The said Mr. *Hales* relates, that in the Month of *July* (the Season for *Fire-blasts*, as the Planters call them) he has seen the Vines in the Middle of the *Hop-Ground* scorch'd up almost from one End of a large Ground to the other, when a hot Gleam of Sun-shine has come immediately after a Shower of Rain, at which Time the Vapours are all seen with the naked Eye, but especially with reflecting Telescopes, to ascend so plentifully as to make a clear and distinct Object become immediately very dim and tremulous. Nor was there any dry gravelly Vein in the Ground along the Course of this Scorch: It was therefore, probably, owing to the much greater Quantity of scorching Vapours in the Middle, than the Outfides of the Ground; and that being a denser Medium, it was much hotter than a more rare Medium.

And, perhaps, the great Volume of ascending Vapours might make the Sun-beams converge a little towards the Middle of the Ground,

that being a denser Medium, and thereby increase the Heat considerably: For he observ'd, that the Course of the scorched *Hops* was in Lines at Right Angles to the Sun-beams about Eleven o'Clock, at which Time the hot Gleam was.

The *Hop-Ground* was in a Valley which ran from South-West to North-East; and, to the best of his Remembrance, there was but little Wind, and that in the Course of the Scorch: But had there been some other gentle Wind, either North or South, 'tis not improbable but that the North Wind gently blowing the Volume of rising Wreak on the South-side of the Ground, that Side might have been most scorch'd; and so *vice versa*.

As to particular Fire-blasts which scorch here and there a few *Hop-Vines*, or one or two Branches of a Tree, without damaging the next adjoining; what Astronomers observe, may hint to us a no very improbable Cause of it, *viz.* They frequently observe (especially with reflecting Telescopes) small separate Portions of pellucid Vapours floating in the Air, which, tho' not visible to the naked Eye, are yet considerably denser than the circumambient Air: And Vapours of such a Degree of Density may very probably either acquire such a scalding Heat from the Sun, as will scorch what Plants they touch, especially the more tender.

But to return to the Management of *Hops*.

About the Middle of *July* *Hops* begin to blow, and will be ready to gather about *Bartholomew-tide*: A Judgment may be made of their Ripeness, by their strong Scent, their Hardness, and the Brownish Colour of their Seed,

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When by these Tokens they appear to be ripe, they must be pick'd with all the Expedition possible; for if at this Time a Storm of Wind should come, it would do them great Damage, by breaking the Branches, and bruising and discolouring the *Hops*. And it is very well known, that *Hops* being pick'd green and bright, will sell for a third Part more than those which are discoloured and brown.

The most convenient way of picking them, is into a long square Frame of Wood call'd a *Binn*, with a Cloth hanging on Tenter-hooks within it, to receive the *Hops* as they are pick'd.

This Frame is compos'd of four Pieces of Wood join'd together, supported by four Legs, with a Prop at each End to bear up another long Piece of Wood plac'd at a convenient Height over the Middle of the *Binn*; this serves to lay the Poles upon which are to be pick'd.

This *Binn* is commonly eight Foot long, and three Foot broad; two Poles may be laid on it at a Time, and six or eight Persons may work at it, three or four on each Side.

It will be best to begin to pick the *Hops* on the East or North-side of your Ground, if you can do it conveniently; this will prevent the South-west Wind from breaking into the Garden.

Having made choice of a Plot of the Ground containing eleven Hills square, place the *Binn* upon the Hill which is in the Centre, having five Hills on each Side; and when these Hills are pick'd, remove the *Binn* into another Piece of Ground of the same Extent, and so proceed till the whole *Hop-Ground* is finish'd.

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When the Poles are drawn up to be pick'd, you must take great Care not to cut the Binds too near the Hills, especially when the *Hops* are green, because it will make the Sap to flow excessively.

And if the Poles do not come up without Difficulty, they should be rais'd by a Piece of Wood in the Nature of a Lever, having a forked Piece of Iron with Teeth on the Inside, fasten'd within two Foot of the End.

The *Hops* must be pick'd very clean, *i. e.* free from Leaves and Stalks; and, as there shall be occasion, two or three times in a Day the *Binn* must be emptied into a *Hop-bag* made of coarse Linen Cloth, and carry'd immediately to the Oast or Kiln, in order to be dry'd: For if they should be long in the *Binn* or Bag, they will be apt to heat, and be discolour'd.

If the Weather be hot, there should no more Poles be drawn than can be pick'd in an Hour; and they should be gather'd in fair Weather, if it can be, and when the *Hops* are dry; this will save some Expence in Firing, and preserve their Colour better when they are dry'd.

The best Method of drying *Hops*, is with Charcoal on an Oast or Kiln cover'd with Hair-Cloth, of the same Form and Fashion that is us'd for Drying of *Malt*. There's no need to give any particular Directions for the Making it; since every Carpenter or Bricklayer, in those Countries where *Hops* grow, or *Malt* is made, knows how to build them.

The Kiln ought to be square, and may be of ten, twelve, fourteen, or sixteen Feet over at the Top, where the *Hops* are laid, as your Plantation requires, and your Room will

will allow. There ought to be a due Proportion between the Height and the Breadth of the Kiln and the Beguels of the Steddle where the Fire is kept; viz. If the Kiln be twelve Feet square on the Top, it ought to be nine Feet high from the Fire, and the Steddle ought to be six Feet and an half square, and so proportionable in other Dimensions.

The *Hops* must be spread even upon the Oast a Foot thick or more, if the Depth of the Curb will allow it. But Care is to be taken not to over-load the Oast, if the *Hops* be green or wet.

The Oast ought to be first warm'd with a Fire before the *Hops* are laid on; and then an even steady Fire must be kept under them: It must not be too fierce at first, lest it scorch the *Hops*; nor must it be suffer'd to sink or slacken, but rather be increas'd till the *Hops* be nearer dry'd, lest the Moisture or Sweat which the Fire has rais'd, fall back or discolour them: When they have lain about nine Hours, they must be turn'd, and in two or three Hours more they may be taken off the Oast. It may be known when they are well dry'd by the Brittleness of the Stalks, and the easy falling off of the *Hop-Leaves*.

The *Dutch* and *Flemings* have another Method of drying their *Hops*: They make a square Kiln or Room about eight or ten Feet wide, built of Brick or Stone, having a Door at one Side, and a Fire-place in the Middle of the Room, on the Floor, about thirteen Inches wide within, and thirteen Inches high in Length from the Mouth of it almost to the Back-part of the Kiln, a Passage being left just enough for a Man to

go round the End of it. This they call a Horse, such as is commonly made in Malt-kilns, the Fire passing out at Holes at each Side, and at the End of it.

The Bed or Floor, on which the *Hops* lie to be dry'd, is plac'd about five Feet high above; about that is a Wall, near four Feet high, to keep the *Hops* from falling.

A Window is made at one Side of the upper Bed, to shove off the dry *Hops* down into a Room prepar'd to receive them. The Beds are made of Laths or Rails sawn very even, lying a quarter of an Inch distant from one another, with a Cross-beam in the Middle to support them; the Laths are let in even with the Top of the Beam, and this keeps them even in their Places. This they call an Oast.

The *Hops* are laid on this Bed by Baskets full, without any Oast-cloth, beginning at one End, and so going on till all is cover'd half a Yard thick, without treading them; then they even them with a Rake, that they may lie of an equal Thickness.

This being done, they kindle the Fire below, either of Wood or Charcoal; but the latter is accounted the better Fewel for *Hops*: This Fire is kept as much as may be at an equal or constant Heat, and only at the Mouth of the Furnace, for the Air will sufficiently disperse it.

They do not stir them till they are thoroughly dry'd, i. e. Till the Top is as fully dry'd as the Bottom; but if they find any Place not to be so dry as the rest (which may be known by reaching over them with a Stick or Wand, and touching them in several Places) they observe where they do not rattle,

rattle, and where they do; and where they do not rattle, they abate them there, and dispose of them where the Places were first dry.

They know when they are thoroughly dry by the Brittleness of the inner Stalk, if it be short when it is rubb'd; which when they find, they take out the Fire, and shove out the *Hops* at the Window, that is made for that Purpose, into the Room made to receive them, with a Coal-Rake made with a Board at the End of a Pole; and then go in at the Door below, and sweep up the *Hops* and *Seeds* that fall through, and put them to the other *Hops*; then they lay another Bed of green *Hops*, and renew the Fire, and proceed as before.

This Method is disapprov'd by some, because they say, the *Hops* lying so thick, and not being turn'd, the under Part of them must needs dry before the upper, and the Fire passing through the whole Bed to dry the upper-most, must necessarily over-dry and much prejudice the greatest Part of the *Hops* both in Strength and Weight, besides the unnecessary Expence of Firing, which must be long continu'd to dry thoroughly so many together.

Therefore some have improv'd on this Method, and advis'd to make the Kiln much as is before directed as to the *Dutch Way*.

First, to make a Bed of flat Ledges about an Inch thick, and two or three Inches broad, sawn and laid across one another, the flat Way Chequerwise, at about three or four Inches Distance one from the other, the Edges being so enter'd one into the other, that the Floor may be even and smooth: This Bed may be made to rest on two or three Joists, set edge-wise, to support it from sinking.

This Bed is to be cover'd with large double Tin, solder'd together at each Joint, and the Ledges must be so order'd, before they are laid, that the Joints of the Tin may always lie over the Middle of the Ledge, the Bed being wholly cover'd over with Tin, Boards must be fitted about the Edges of the Kiln, to keep up the *Hops*; but one Side must be made to remove, that the *Hops* may be shov'd off as before.

On this Bed or Floor of Tin, the *Hops* may be turn'd without such Hazard or Loss, as upon the Hair-cloth, and also it will require a less Expence of Fewel; and besides, any Sort of Fewel will serve in this Kiln as well as Charcoal, because the Smoak does not pass through the *Hops*, as it does the former Ways: But then Care is to be taken, that there be Passages made for it at the several Corners and Sides of the Kiln.

It is found by Experience, that the turning of *Hops*, though it be after the most easy and best Manner, is not only an Injury and Waste to the *Hops*, but also an Expence of Fewel and Time, because they require as much Fewel, and as long a Time to dry a small Quantity, by turning them, as a large one.

Now this may be prevented, by having a Cover (to be let down and rais'd at Pleasure) to the upper Bed whereon the *Hops* lie.

This Cover may also be tinn'd, by nailing single Tin Plates over the Face of it, so that when the *Hops* begin to dry, and are ready to burn, *i. e.* when the greatest Part of their Moisture is evaporated, then the Cover may be let down within a Foot or less of the *Hops* (like a Reverberatory) and will reflect the Heat upon them,

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so that the Top will soon be as dry as the Lowermost, and every *Hop* be equally dry'd.

As soon as the *Hops* are taken off the Kiln, lay them in a Room for three Weeks or a Month to cool, give, and toughen, for if they are bagged immediately, they will powder; but if they lie a while (and the longer they lie the better, provided they be cover'd close with Blankets to secure them from the Air) they may be bagged with more Safety, as not being liable to be broken to Powder in treading, and this will make them bear treading the better, and the harder they are trodden, the better they will keep.

The common Method of Bagging is as follows: They have an Hole made in an upper Floor, either round or square, large enough to receive a Hop-bag (which consists of four Ells and an half of Ell-wide Cloth, and also contains ordinarily two hundred and an half of *Hops*;) they tie a Handful of *Hops* in each lower Corner of the Bag, to serve as Handles to it; and they fasten the Mouth of the Hole, so plac'd, that the Hoop may rest upon the Edges of the Hole.

Then he that is to tread the *Hops* down into the Bag, treads the *Hops* on every Side, another Person continually putting of them in as he treads them, till the Bag is full; which being well fill'd and trodden, they unrip the Fastening of the Bag to the Hoops and let it down, and close up the Mouth of the Bag, tying up a Handful of *Hops* in each Corner of the Mouth, as was done in the lower Part.

Hops being thus pack'd, if they have been well dry'd, and laid up in a dry Place, they will keep

good several Years; but Care must be taken that they be neither destroy'd nor spoil'd by the Mice making their Nests in them.

The Crop of *Hops* being thus bestow'd, you are to provide for another; first by taking Care of the Poles against another Year, which are best to be laid up in a Shed, having first stripped off the Haulm from them: But if you have not that Conveniency, set up three Poles in the Form of a Triangle, or six Poles (as you please) wide at Bottom; and having set them into the Ground, with an Iron Pitcher, and bound them together at Top, set the rest of your Poles about them: And being thus dispos'd, none but those on the Outside will be subject to the Injuries of the Weather, for all the inner Poles will be kept dry, unless at the Top, whereas if they were on the Ground, they would receive more Damage in a Fortnight, than by their standing all the rest of the Year.

In the Winter-time, provide your Soil and Manure for the *Hop-ground* against the following Spring.

If the Dung be rotten, mix it with two or three Parts of common Earth, and let it incorporate together till you have occasion to make use of it in making your *Hop-hills*; but if it be new Dung, then let it be mix'd as before, till the Spring come twelve Months, for new Dung is very injurious to *Hops*.

Dung of all Sorts was formerly more commonly made use of than now it is, especially when rotted and turn'd to Mould; and they who have no other Manure must use it: Which if they do, Cows or Hogs Dung, or human Ordure mix'd with Mud may be a proper

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Compost, because *Hops* delight most in a Manure that is cool and moist.

Some recommend Chalk or Lime as the best Manure, except in cold Lands, and in such, Pigeons Dung will do best; a little of which laid to a Hill, and so mix'd that it may not be too hot in a Place, is of great Advantage.

LUTEOLA; Weld, Would, Yellow-weed, or Dyers-weed.

The *Characters* are;

The Leaves are oblong and intire; it hath an anomalous Flower, consisting of many dissimilar Leaves; the Fruit is globular, hollow, and divided into three Parts.

The *Species* are;

1. **LUTEOLA**; *herba, Salicis folio*. C. B. P. Common Weld.

2. **LUTEOLA**; *minima Polygala folio*. D. du Bois. Raii Syn. Smallest Weld, with a Milk-wort Leaf.

The first of these Plants is very common in England, growing upon dry Banks and the Tops of Walls and Buildings almost every where; but the second Sort is very rare: This was found near *Tunbridge-Wells* by *Charles du Bois, Esq*; several Years since.

The common *Weld* is accounted a rich Dyer's Commodity, and is of great Advantage, considering the small Expence of its Culture: It will grow upon the poorest Sort of Land, provided it be dry, though upon a middling Soil it will grow much larger. The Seeds of this Plant should be sown the Beginning of *August*, soon after ripe; when it will come up with the first moist Weather, and will grow very strong the same *Autumn*, provided it be sown by itself, for most People sow it with Corn, which is very wrong, for that hinders its Progress greatly, and occasions

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the Loss of one whole Year. When the Plants are come up pretty strong, you should hoe them (as is practis'd with *Turnips*) in order to destroy the Weeds, as also to cut up the Plants where they grow too thick, which will greatly improve them; and the succeeding *Spring*, if the Ground produces many Weeds, you should give it a second Hoeing in *April*, which will preserve it clean from Weeds; for after that the *Weld* will grow, and prevent the Weeds from coming to a Head afterwards.

You must be very cautious in the Gathering of it, that the Seed be not over-ripe, so as to fall out, and that neither the Stalk or Seed be under-ripe; because if it be, both will be spoil'd. It must be pull'd up and bound in little Handfuls, and set to dry, as you do *Flax*, and then house it carefully, that you shake not out the Seed, which is easily beat out, and should be sown (as was before directed) soon after it is ripe.

This Seed is commonly sold for about Ten Shillings per Bushel, or more; a Gallon of which will sow an Acre, for it is very small.

There are some who recommend the sowing this Seed in the *Spring*, mixing it with a Crop of *Barley* or *Oats*, and only harrow'd in with a Bush, or rolled with a Roller. But this is not a good Method; for the *Barley* or *Oats* will starve the *Weld*, and make it very poor: And, many times, the Seeds which are sown in the *Spring*, do not grow, or not come up, till the *Autumn* following; whereas that sown in the Beginning of *August*, rarely fails to come up soon after; and will be much stronger, and fit to pull the succeeding *Summer*, when the other

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ther is always two Years before it is pull'd. The Dyers use it for dying of bright Yellows and Lemon Colours. 'Tis much sown in Kent, especially about Canterbury, and often yields from forty Shillings, to ten or twelve Pounds an Acre.

LYCHNIS; Campion.

The Characters are;

The Leaves are whole, and grow opposite by Pairs upon the Stalks: The Cup of the Flower is whole, and either tubulous or swelling, and for the most Part furrow'd: The Flower consists of five Leaves, which expand in Form of a Clove-Gilly-flower, and are generally Heart-shap'd: The Ovary, which rises in the Centre of the Calix, becomes a conical Fruit, which is wrapt up in the Flower-Cup, and has commonly one Cell, which is fill'd with Seeds, which are roundish, angular, and Kidney-shap'd.

The Species are;

1. LYCHNIS; *coronaria*, *Dioscoridis*, *sativa*, *flore dilute rubente*. C. B. P. Garden or Rose Campion, with a pale-red Flower.

2. LYCHNIS; *coronaria*, *Dioscoridis*, *sativa*, *flore rubro, velut flammeo fulgens*. C. B. P. Rose Campion, with a flaming red colour'd Flower.

3. LYCHNIS; *coronaria*; *sativa* *multiplex*. C. B. P. The Double Rose Campion.

4. LYCHNIS; *coronaria*, *sativa*, *Dioscoridis*, *flore albo*. C. B. P. The Single White Rose Campion.

5. LYCHNIS; *umbellifera*, *montana*, *Helvetica*. Zan. Umbelliferous Mountain Campion of Helvetia.

6. LYCHNIS; *alba*, *multiplex*. C. B. P. Double White Campion, commonly call'd The Double Batchelor's Button.

7. LYCHNIS; *purpurea*, *multi-*

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plex. C. B. P. Double Red Campion, commonly call'd The Double Red Batchelor's Button.

8. LYCHNIS; *pratensis*, *flore laciniato, pleno*. Mor. Hist. The Double Meadow Campion, with a jagged Flower, commonly call'd The Double Ragged Robin.

9. LYCHNIS; *hirsuta*, *flore coccineo major*. C. B. P. The Scarlet Lychnis, Nonsuch, Jerusalem Cross, or Flower of Constantinople.

10. LYCHNIS; *hirsuta*, *flore incarnato, major*. C. B. P. Great Hairy Campion, with a Flesh-colour'd Flower, commonly call'd The Pale Lychnis of Constantinople.

11. LYCHNIS; *Chalcedonica*, *flore pleno miniato, seu aurantiaco*. Mor. Hist. The Double Scarlet Lychnis, or Flower of Constantinople.

12. LYCHNIS; *seu saponaria*, *flore pleno*. Tourn. Double Soap-wort; *vulgô*.

13. LYCHNIS; *sylvestris*, *qua Beën album, vulgô*. C. B. P. Wild Campion Spatling Poppy, or white Behen of the Shops.

14. LYCHNIS; *sylvestris*, *viscosa, angustifolia rubra*. C. B. P. Red German Catchfly.

15. LYCHNIS; *sylvestris*, *viscosa, angustifolia rubra, flore pleno*. Red German Catchfly, with a Double Flower.

16. LYCHNIS; *Orientalis, bupleuri folio*. T. Cor. Eastern Campion, with a Hare's-ear Leaf.

17. LYCHNIS; *facie auricula ursi*. C. B. P. Campion, with the Face of an Auricula.

18. LYCHNIS; *maritima, saxatilis, folio anacampterositis*. T. Cor. Maritime Rocky Campion, with an Orpine Leaf.

19. LYCHNIS; *noctiflora, angustifolia, odorata*. Tourn. Night-flower'd sweet-scented Campion, with a narrow Leaf.

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20. LYCHNIS;

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20. *LYCHNIS; frutescens, myrtifolia, Beën albo similis. C. B. P.* Shrubby Myrtle leav'd Campion, like the White Behen.

21. *LYCHNIS; segetum, rubra, foliis perfoliata. C. B. P.* Red Corn-Campion, with thorough-wax Leaves.

22. *LYCHNIS; supina, Sicula, calice amplissimo, striato. Tourn.* Low Sicilian Campion, with a large streak'd Flower-cup.

23. *LYCHNIS; sylvestris, viscosa, angustifolia rubra, altera. C. B. P.* Another narrow-leav'd wild Campion, with a viscous Stalk, and red Flowers.

24. *LYCHNIS; viscosa, purpurea, latifolia levis. C. B. P.* Purple viscous Campion, with a broad smooth Leaf, commonly call'd Lobel's Catch-fly.

25. *LYCHNIS; viscosa, alba, latifolia levis. C. B. P.* White flowering broad-leav'd Catch-fly.

26. *LYCHNIS; hirsuta, minor, flore variegato. Tourn.* Small hairy Campion, with a variegated Flower, commonly call'd Dwarf *Lychnis*.

27. *LYCHNIS; Hispanica, folio Kali, multiflora. Tourn.* Spanish Many-flower'd Campion, with a Glass-wort Leaf.

28. *LYCHNIS; Hispanica, Valeriane rubra folio, purpurascente flore. Tourn.* Spanish Campion, with a red Valerian Leaf, and a purplish Flower.

29. *LYCHNIS; segetum, meridionale, annua, hirsuta, floribus rubris, uno versu dispositis, Mor. Hist.* Corn annual hairy Campion, with red Flowers dispos'd on one Side of the Stalk.

30. *LYCHNIS; sylvestris, alba, spica reflexa. Bot. Monsp.* White wild Campion, with a reflex'd Spike.

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The first, second, and fourth Sorts are very common in most *English* Gardens: These are very hardy Plants, and easily propagated either by parting of their Roots, or from Seed; if by parting the Roots, it should be done about the Latter-end of *August*, or the Beginning of *September*, that they may take Root before the cold Weather comes on: They may be planted in any Situation, provided they have a light dry Soil. If you would propagate them from Seeds, they should be sown in *March* upon a Bed of fresh light Earth; and in *May* the Plants should be transplanted into another Bed of the like fresh Earth, at about six Inches Distance from each other; observing to water and shade 'em until they have taken Root; after which, they will require no farther Culture than to keep them clear from Weeds.

At *Michaelmas* following these Plants may be placed into the large Borders of the *Pleasure-Garden*, where, the Summer following, they will produce their Flowers in *June* and *July*; and soon after their Seeds will ripen, which, if permitted to shed on the Ground, will rise in the succeeding Spring, without any Care.

These Plants, when intermix'd with others of the like Size, do make an agreeable Variety during the Season of Flowering.

The *Double Rose Campion* is somewhat nicer, and requires more Care in its Culture than any of the former: This never produces any Seeds, and is therefore only to be propagated by parting the Roots; the best Time for which is in *August*, when the Heads taken off should be planted on a Bed of light fresh Earth;

Earth; and if the Season should prove dry, they must be water'd and shaded until they have taken Root: After which, they must be kept clear from Weeds; and, during the Winter-season, they should be skreen'd from excessive Rains; for too much Moisture at that Season, very often rots them. In *March* they may be taken up with a Ball of Earth to their Roots, and transplanted either into the Borders of the *Flower-Garden*, or in Pots fill'd with light fresh Earth, and plac'd where they may have the Morning Sun 'till Eleven o' Clock, in which Situation they will thrive better than when they have more of the Sun. In dry Weather they must be frequently watered: but you should never let them have too much Wet, for that will canker and rot 'em, as will also a very rich Soil. This Plant commonly grows about two Feet high, and produces a great Number of beautiful red Flowers in *June* and *July*, which continue a long Time, for which they are greatly esteem'd.

The *Umbelliferous Mountain Campion* is nearly akin to the before-mention'd Sorts, but produces its Flowers in an Umbel upon the Top of the Stalks which are of a bright red Colour, and make a very pretty Variety in a Garden: This seldom grows above eight or nine Inches high, therefore it should be placed amongst Flowers of the same Growth; it delights in a light fresh undung'd Soil, and shady Situation, and may be propagated either from Seeds, which it commonly affords in great Plenty, or from Slips, as the before-mention'd Sorts.

The *Red* and *White Batchelor's Button* are very hardy Plants, in respect to Cold: but if they are

suffer'd to remain long in a Place unremov'd, they are very subject to rot and decay. They never produce Seeds, so are propagated only by parting of their Roots, which may be done either in *September*, or in the Beginning of *March*: but the former Season is preferable; for they will then be well rooted in the Ground before the dry Weather of the *Spring* comes on, whereby they will be out of Danger from that; whereas those planted in the *Spring*, if the Weather should prove dry soon after, will starve, and be very weak, unless frequently water'd: These commonly grow above two Feet high, and produce their Flowers in *June* and *July*: They love a fresh loamy Soil, which should not be dung'd, and to have a Situation to the Morning Sun, in which they will thrive better than in a more open Exposure.

The *Double Ragged Robin* is also increas'd by parting the Roots in *Autumn*: This Plant must have a moist Soil, and shady Situation, where it will thrive exceedingly: but in a hot dry Soil it seldom does well: It produces its Flowers about the same Time as the former, and is very proper for shady cold Borders, where few other Plants will thrive.

The *Single Scarlet Lychnis* may be either propagated by sowing the Seeds, or parting the Roots: If from Seeds, it should be sown on a Bed of light Earth in the Beginning of *March*; and when the Plants are come up pretty strong (which is commonly in *May*) they should be transplanted out into Nursery-beds at about six Inches Distance each way, observing to water and shade them until they have taken Root; after which they

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will require no farther Care but only to keep them clear from Weeds until *Michaelmas* ; at which time they may be remov'd into the Borders of the Flower-Garden, where the next Summer they will produce very strong Stems of Flowers: but if you would propagate them by parting the Roots, it should be done in *September* (as was directed for the fore-mention'd Sorts). This Plant will grow in almost any Soil or Situation, but does best in a middling, loamy Soil, and an open Exposure.

The *Double Lychnis*, or *Nonfuch*, is only propagated by parting the Roots, or planting the Cuttings of its Flower-stems, which, if water'd and shaded, will take Root very well, and make good Plants. The best Season for parting the Roots is in *September*: but for planting the Cuttings, *July* is the most proper Season; in doing of this, you should take only the lower Parts of the Flower-stems, which generally succeed much better than the extreme Parts: The Cuttings should have three Joints, two of which should be placed in the Ground, and the third only left above-ground, from which the Shoot will be produc'd and make a good Plant; by which Method this beautiful Flower may be propagated much faster than from the Root alone.

This Plant delights in a fresh light Soil, which is not too dry, where it will produce very strong Stems, and rise about three Feet high. This flowers in *July*, and if the Season does not prove very hot, will continue in Beauty a whole Month, for which it is greatly esteem'd.

The *Double Sopewort* is a Plant of no great Beauty; and being a very great Runner in Gardens, has

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been almost excluded from all curious Gardens: but as it is a Plant which requires very little Culture, so it may be admitted to have a Place in some abject Part of the Garden. This is propagated by its running Roots, which should be transplanted in *October*, and may be plac'd in any Soil and Situation, but should never stand near any other Plants, for it will over-run and destroy them. It may be planted under Trees in large Avenues, &c. where it will thrive very well, and in *August* will produce large Bunches of double Flowers, which are very proper to place in Chimneys, &c. or in Basons among other Flowers, where it will make a fine Appearance; and were it less common, it would be more esteem'd than it is at present.

The *Spatling Poppy*, or *White Behen*, is a very common Plant in the Fields in most Parts of *England*, and is rarely cultivated in Gardens; but those who have a mind to preserve it for Medicinal Uses, may propagate it by sowing the Seeds in *March* on a Bed of common Earth, where the Plants will easily rise, and if kept clear from Weeds will soon overspread the Ground, and will continue for several Years.

The *Red German Catchflies*, both single and double, are easily propagated by parting the Roots, which should be done in Autumn, for if it be perform'd in the Spring, the dry Weather, which usually happens at that Season, greatly retards their Growth, whereby their Flowers are never so strong, nor produc'd in such Plenty as when they are remov'd in Autumn. These produce their Flowers in Spikes upon clammy Stalks, which grow about a Foot high, and flower in *April* and *May*: That with single Flowers

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Flowers always is the earliest, but the double Sort continues longest in Flower.

The single Sort may be propagated by Seeds, which should be sown in *March*, upon a Bed of light Earth; and when the Plants come up, they should be transplanted into Nursery-beds about six Inches asunder, where they will require no farther Care than to keep them clear from Weeds, and in very dry Weather to give them a little Water, and at *Michaelmas* they may be remov'd where they are design'd to remain.

The single flower'd Sort is not near so beautiful as the Double, and therefore hardly worth propagating, since the Double is very easily multiply'd; especially if planted in a moist, light Soil, in which it will thrive exceedingly, and produce strong Flowers. This Sort is very proper to plant in Pots, to adorn small Court-Yards at the Time of its Flowering.

The sixteenth and nineteenth Sorts are pretty Varieties in a Garden; and as they take up but little Room, and are not very nice in their Culture, they may have a Place amongst other Flowers of the same Growth. These are propagated by sowing their Seeds in *March*, upon a Bed of light, fresh Earth; and when the Plants are come up, they should be transplanted into a Nursery-bed, as the former, and at *Michaelmas* may be remov'd into the Borders of the Flower-Garden, where they are to remain. These Plants commonly grow about two Feet high; but as their Leaves are narrow, and the Flower-stems stand erect, so they take up very little Room, and their Roots will continue several Years, and annually produce large Quan-

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tities of Flowers: These delight in a fresh light dry Soil.

The seventeenth is a biennial Plant; and is only propagated by Seeds, which should be sown on a Border of fresh light Earth in *March*; and when the Plants are come up, they should be transplanted: some of which should be planted in Pots fill'd with the same fresh Earth, that they may be remov'd under Shelter in Winter: for it often happens, in severe Winters, that those Plants which are plac'd in the open Air are destroy'd; for which Reason it is adviseable to have some of the Plants in Shelter to secure the Kind.

The other Plants may be planted in a Nursery-bed, as was directed for the former Kinds, where they may remain until *Michaelmas*; at which Time they should be transplanted into warm Borders, and in a light dry Soil, where they will endure the Cold of our ordinary Winters very well, and flower very strong the succeeding Summer. This Plant commonly grows three Feet high, and is apt to branch out pretty much, therefore should be supported by Stakes, otherwise the Wind often breaks down the Flower-stems before the Seeds are perfected.

The eighteenth Sort is also tender: This may be propagated by sowing the Seeds in the same manner as the former; and when the Plants come up, some of them should be planted into Pots fill'd with light fresh undung'd Earth, that they may be shelter'd in Winter; and the rest planted into a Nursery-bed, which should be prepar'd of fresh light Earth that has not been dung'd; for Moisture and Richness in the Soil will destroy them;

them: In this Place they may remain till *Michaelmas*, when they should be remov'd into very warm Borders; and if they are plac'd quite close to the Wall, where it is commonly very dry, they will succeed the better; as also planted on a dry rubbishy Soil, for the Leaves of this Plant are very thick and succulent, as are all the Stems, so that it is as impatient of Wet as the *Sedum* or *Houfseleek*; and I do not certainly know whether this Plant would not bear a greater Share of Cold, if it was planted upon an old Wall or Building, where it might be always dry, and not have too much Nourishment from the Ground. The following Summer this Plant will produce its Flowers, (which though they are not very beautiful, yet for the Oddness of the Plant it may have a Place in a good Garden) and the Seeds generally ripen in *August*: It may also be propagated by planting Cuttings in any of the Summer Months, which will take Root, and may be afterwards manag'd as the Seedling-Plants.

The *Myrtle-leav'd, shrubby Campion* may be propagated by Seeds as the former, or increas'd by planting Cuttings in any of the Summer Months, which will soon after take root, and become strong Plants; some of which should be planted in Pots, that they may be shelter'd in Winter for fear of being lost, tho' they will endure the Cold of our Climate very well, if planted on a dry Soil. There is no great Beauty in this Plant, but it is preserv'd for Variety Sake in several curious Gardens.

The twenty-seventh and twenty-eighth Sorts are abiding Plants, and may be propagated either by Seeds or parting their Roots, in the

Manner which has been directed for the *Rose Campion*, and other Sorts before-mention'd: They are very hardy, and will grow upon almost any Soil or Situation: They produce their Flowers in *June* and *July*, and their Seeds ripen soon after.

The other Sorts are all of them annual Plants, which may be easily propagated by sowing their Seeds either in *March* or *August*, when the Plants will soon come up, and may be transplanted, while young, into the Places where they are design'd to remain; or the Seeds may be scatter'd in Patches upon the large Borders of the Flower-Garden; and when the Plants are come up, they may be thin'd, leaving some of the strongest to flower in the same Places, and the other Plants may be remov'd into other Parts of the Garden.

Those Plants which come up in Autumn will be much larger, and flower earlier and stronger than those sown in the Spring, and will produce good Seeds; whereas it sometimes happens, in bad Seasons, that those sown in the Spring do often decay before their Seeds are perfected, tho' it is a good Method to sow at both Seasons, because hereby there will be a Succession of their Flowers, and two Chances for good Seeds.

The *Dwarf Lychnis* has been by some recommended to be sown for Edgings in large Gardens, but I think it by no means proper for that Purpose; for when the Plants grow very close together, they draw up weak, so that in hard Rains they are beaten down flat to the Ground, and the Flowers seldom continue long in Beauty, so that it does not afford any Pleasure above

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a Fortnight or three Weeks at most, after which it appears very unfightly, for when it is in Seed, the Weight of that forces it down upon the Ground; but when the Plants grow singly, they will be much larger and stronger, and continue longer in Flower.

The two Sorts of *Lobel's Catchfly* have been long cultivated in Gardens, and the Seeds are commonly sold at the Seed-shops in London: These grow upright to the Height of sixteen or eighteen Inches, (if sown in the Autumn, but those which are sown in the Spring seldom grow so large) and produce pretty Tufts of Flowers upon the Tops of the Branches in Form of an Umbel, which continue a long Time in Perfection, and are pretty Ornaments in a large Garden.

The twenty-second Sort spreads upon the Ground, and therefore must be allow'd more Room than the former. These Plants should be planted two Feet asunder, otherwise they will run into each other, (especially such as are sown in the Autumn) so that in wet Weather they are subject to rot and decay. This produces a great Number of beautiful red Flowers, which make a very agreeable Appearance during their Season of Flowering.

There are a great Number of Sorts more than I have here mention'd, which are preserv'd in curious Botanick Gardens for Variety Sake; but as most of them are Plants of little Beauty, so I thought it needless to enumerate them in this Place, since those here mention'd are the best worth propagating in a Flower-Garden.

But before I quit this Article, I shall beg Leave to add two Plants to this Genus by way of Appendix,

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tho', according to their Characters, they do not, in Strictness, belong to it, differing in their Flowers from the *Lychnis's*, which have their Flowers cut to the Bottom into five Parts; whereas the Flowers of these Kinds are intire, consisting of one Leaf: Which Distinction being not very great, the modern Botanists have thought proper to distinguish them by the Name of *Lychnidea*, which signifies something like a *Lychnis*. Of this Genus we have, at present, but two Species which are common in England, viz.

1. *LYCHNIDEA*; *Virginiana*. *Holstei ampliore folio, floribus umbellatis purpureis*. Rand. Virginian *Lychnidea*, with a broad Stitchwort Leaf and Purple Flowers growing in an Umbel.

2. *LYCHNIDEA*; *Caroliniana floribus quasi umbellatim dispositis, foliis lucidis, crassis, acutis*. Martyn. *Hist. Plant. Rar.* Carolina *Lychnidea*, with Flowers growing almost in an Umbel, and thick, shining, sharp-pointed Leaves.

These two Plants are propagated either by Cuttings, or parting of their Roots, for they do not produce Seed in this Country. The best Time to part their Roots is in the Beginning of *April*, just before they begin to shoot; when you should take up the Roots, and after having pared off the outer Part of the Ball of Earth, so as to see where the Heads divide distinctly, you must with a Knife separate them, so as to preserve some Buds upon the Top of each Division; then you may plant them either into Borders of fresh Earth, or Pots fill'd with good fresh loamy Earth, observing to water them, if the Season should prove dry, until they have taken Root; after which, those

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those in the Borders will require no farther Care, but only to clear them from Weeds, and when the Flower-stems advance, to support them with Sticks; but those in the Pots must be frequently water'd in dry Weather, otherwise they will soon decay.

The first of these Plants produces its Flowers in *May*; but the second seldom flowers till the Middle of *June*, so that they succeed each other: During their Season of flowering, they make a very handsome Appearance, and are very proper to cut for Basons or Flower-Pots to adorn Chimnies and Halls at that Season: But the second Sort is a much fairer Plant than the first: The Stems of this Sort rise higher, and are stronger; the Flowers are larger, and of a deeper Colour; but it is not quite so hardy as the first, which will endure the severest Cold of our Climate in the open Air, whereas this must be shelter'd in hard Winters, otherwise it will be in Danger of suffering by the Cold, tho' in our common Winters it will endure abroad very well.

These Plants may also be propagated by Cuttings, which should be taken from the old Plants in *May* or *June*, and planted on a Border of fresh light Earth, observing to water and shade them, until they have taken Root; after which, you must observe to keep them clear from Weeds, and in very dry Weather repeat watering them as often as they shall want it; and when they have obtain'd sufficient Strength to remove, they may be transplanted either into Pots or Borders, where they are to remain. By this Method you may greatly increase these Plants, which will supply the Defect of Seeds.

LYCOPERSICON; Love-Apples.

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The Characters are;

It hath a Flower consisting of one Leaf, which expands in a circular Order, as doth that of the Night-shade; the Style afterwards becomes a roundish, soft, fleshy Fruit, which is divided into several Cells, wherein are contain'd many flat Seeds.

The Species are;

1. **LYCOPERSICON**; *Galen.* *Ang.* Yellow Love-Apple.

2. **LYCOPERSICON**; *Galen.* *fructu rubro.* *Boerh. Ind.* Love-Apple, with a Red Fruit.

3. **LYCOPERSICON**; *fructu Cerasi luteo.* *Tourn.* Love-Apple, with a Red Cherry-shap'd Fruit.

4. **LYCOPERSICON**; *fructu Cerasi luteo.* *Tourn.* Love-Apple, with a yellow Cherry-shap'd Fruit.

5. **LYCOPERSICON**; *fructu striato, duro.* *Tourn.* Love-Apple, with a hard channell'd Fruit.

There are some Varieties of these Plants in the Gardens of *Italy* and *Spain*, but those here mention'd are all the Sorts I have observ'd in the *English* Gardens.

These Plants are propagated by sowing their Seeds on a moderate Hot-bed in *March*; and when come up, they should be transplanted into another moderate Hot-bed, at about three Inches Distance from each other, observing to shade them until they have taken Root; after which they must have frequent Waterings, and a large Share of fresh Air, for if they are too much drawn while young, they seldom do well afterwards.

In *May* these Plants should be transplanted, either into Pots fill'd with rich light Earth, or into the Borders of the Flower-Garden, observing to water and shade them until they have taken Root; and as the Branches are extended, they should be supported with Sticks, other-

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otherwise when the Fruit begins to grow, it will press them down, and break them.

Those Plants which are plac'd in Pots, should be often water'd, otherwise they will come to little, (for they are very droughty Plants) but when they are planted in a rich moist Soil, they will grow to a prodigious Size, and produce large Quantities of Fruit; which in Autumn, when they are ripe, make an odd Figure, but the Plants emit so strong an Effluvia, as renders them unfit to stand near a Habitation, or any Place that is much frequented; for upon their being brush'd by the Cloaths, they send forth a very strong disagreeable Scent.

The *Italians* and *Spaniards* eat these Apples, as we do Cucumbers, with Pepper, Oil and Salt, and some eat them stew'd in Sauces, &c. but considering their great Moisture and Coldness, the Nourishment they afford must be bad. The first of these Plants is the Sort directed for Medicinal Use, by the *College* in their *Dispensatory*.

LYCOPUS ; Water-horehound.

This Plant grows in great Plenty on moist Soils by the Sides of Ditches in most Parts of *England*, but is never cultivated in Gardens, so that it would be needless to say any thing more of it in this Place.

LYSIMACHIA ; Lose-strife.

The Characters are ;

The Leaves (which are intire and oblong) are produc'd sometimes by Pairs, or three or four at each Joint of the Stalk ; the Flower consists of one Leaf, which expands in a circular Order, and is cut into several Segments at the Top ; the Fruit is globular, and opens at the Top, in-

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closing many Seeds fix'd to the Placenta.

The Species are ;

1. *LYSIMACHIA ; lutea, major, qua Dioscoridis.* C. B. P. Common yellow Lose-strife or Willow-herb.

2. *LYSIMACHIA ; lutea, major, qua Dioscoridis, foliis quaternis.* C. B. P. Greater yellow Lose-strife or Willow-herb, with four Leaves at each Joint.

3. *LYSIMACHIA ; bifolia, flore luteo globoso.* C. B. P. Lose-strife, with two Leaves growing at each Joint, and yellow Flowers growing in round Heads.

4. *LYSIMACHIA ; Orientalis angustifolia, flore purpureo.* F. Cor. Narrow-leav'd Eastern Lose-strife, with a purple Flower.

5. *LYSIMACHIA ; Hispanica, spicata, flore purpureo.* Jess. Spanish Lose-strife, with purple Flowers growing in Spikes.

The first of these Plants is pretty common by Ditch-sides in many Parts of *England*, and is seldom cultivated in Gardens, tho' it is not a very despicable Plant, for it produces large Spikes of fine yellow Flowers in *July*; for which Reason it may be admitted into a cold wet Part of the Garden, where few others will thrive, whereby many a Spot of Ground may be render'd agreeable, which often produces little but gross Weeds. This Plant may be taken up in the Spring, from the native Places of its Growth, and transplanted where you intend it should grow, and it will soon increase, by its creeping Roots, to what Quantity you please. This Plant is order'd in the *College Dispensatory* for Medicinal Use.

The second Sort is not a Native of our Country, but when transplanted hither thrives equally with the

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the former : This loves a moist rich Soil, and for Variety may be admitted into a Garden.

The third Sort is found in the North of *England* in great Plenty. This Plant is not very proper for a Garden, for the Roots spreading very far under-ground, will over-run whatever Plants stand near it; nor are the Flowers of any Beauty.

The fourth Sort is a biennial Plant, which produces fine Spikes of small purple Flowers in *June*, and the Seeds are ripe in *August*.

This Plant may be propagated by sowing the Seeds soon after they are ripe (for if they are kept until the Spring, they seldom grow) upon a warm Border of light Earth; and when the Plants are come up, they should be transplanted into a Border of strong Earth, where they may have the Morning Sun; in which Place they should remain to flower, for it is a Plant that does not care to be often remov'd.

The fifth Sort is an abiding Plant, which may be propagated by parting its Roots. The best Season for this Work is at *Michaelmas*, when the Leaves begin to decay: It should be planted in a moist Soil and a shady Situation, or must be often water'd, otherwise it will not produce Flowers: It may also be propagated by sowing the Seeds in the same manner as the former; but those Plants which rise from Seeds seldom flower until the second Year, whereas those propagated from Off-sets will flower the succeeding Year. These produce their Flowers in *July*, and their Seeds ripen in *September*.

LYSIMACHIA GALERICULATA; *vide* *Callida*.

LYSIMACHIA NON PAPPOSA; *vide* *Oxigra*.

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LYSIMACHIA SILIQUOSA; *vide* *Chamænerion*.



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MACALEB; *vide* *Cerasus*.

MADDER; *vide* *Rubia Tinctorum*.

MAGNOLIA. The Laurel-leav'd Tulip-Tree, *vulgô*.

The Characters are;

It hath a roseaceous Flower, consisting of several Leaves which are placed in a circular Order, from out of whose Cup arises the Pointal, which afterwards becomes a hard conical Fruit with many Tubers or Risings, in each of which is contained one hard Nut, which, when emitted, hangs by a long String.

The Species are;

1. MAGNOLIA; *Laurifolia subtns albicante. Catesb.* The lesser Laurel-leav'd Tulip-Tree, or sweet flowering Bay.

2. MAGNOLIA; *amplissimo flore albo, fructu caruleo. Plum. N. G.* The larger Laurel-leav'd Tulip-Tree, with large white Flowers, commonly called, the Carolina Laurel.

The first of these Plants is common in *Virginia* and *Carolina*, where it usually rises to the Height of fifteen or sixteen Feet; but in *England* it is very rare at present. The largest Plant of this Kind which I have observed in *England*, is in the Garden of Mr. Peter Colinson, at *Peckham* in *Surry*, which, altho' not above five Feet high, hath produc'd Flowers for several Years past. The Wood of this Tree is white and spongy, covered over with a white Bark; the Leaves are in shape like

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like those of the common *Bay*, of a pale, green Colour, and white on their Backsides. In *May* they begin to produce their Flowers, which are white and very fragrant; these are continued two Months or more, during which time the Woods are perfumed with their Odour. When the Petals of the Flowers are decay'd, the Pointal becomes a Conical Fruit, about the Size of a large Walnut, thick set with Knobs or Risings, from each of which, when the Fruit is ripe, are discharged flat Seeds, of the Size of Kidney-Beans, having a Kernel within a thin Shell, covered with a Red Skin. These red Seeds, when discharged from their Cells, fall not to the Ground, but are supported by small white Threads of about two Inches in length, which make a very beautiful Appearance. The Fruit is at first Green; when ripe, Red, and when declining turns Brown. This Tree grows naturally in moist Places, and often in shallow Water, and what is very extraordinary, they being remov'd on high dry Ground, become more regular and handsome, and are more prolifick of Flowers and Fruit. They usually lose their Leaves in Winter, unless it be very moderate.

The second Sort is esteemed the most beautiful Tree in *America*, where they usually grow in moist swampy Woods, and do often rise to the Height of sixty or seventy Feet; the Leaves are much larger than those of our common Laurel, and are of a bright green Colour; the Flowers are very large, of a white Colour, and very fragrant. The Fruit is shap'd like that of the former Sort, but are much larger, of a purple Colour when ripe, and do emit the Seeds in like manner, so that in Autumn they make a

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most beautiful Appearance, and in *May* and *June*, when they are in Flower, the circumambient Air is perfumed with their Odour: the Leaves of these Trees remaining Green all the Winter do afford an agreeable Prospect in that Season. They are of quick Growth, and generally rise with strait Stems, which is a considerable Addition to their Beauty; and since they are hardy enough to resist the Cold of our Climate in the open Air, I doubt not but we shall have the Pleasure of seeing their Flowers in a few Years; there being several Trees planted in the Gardens of some curious Persons near *London*, where they have endured the Cold of four or five Winters without Shelter, and do make considerable Progress every Year.

These Plants are both of them propagated from Seeds, for they do not take Root well by Laying, nor do those few Plants which have been obtain'd from Layers thrive, nor are they ever like to make handsome Plants; but as there are no Plants in *England* which are likely to produce Seeds in many Years, so there is no way to obtain them, but by procuring their Seeds from *America*: These Seeds should be sown in Tubs of Earth, so soon as they are ripe, (for if they are kept out of the Ground any time, they will not grow) these Tubs should be sent over to *England* as soon as possible, and when they arrive, they should be placed on a gentle Hot-bed, observing to shade them from the Sun, and often refresh them with Water: In this Situation the Plants will appear above Ground in a Month or five Weeks, and if they are kept moist and shaded from the Sun, will make considerable Progress. In

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July you should begin to enure them to the open Air, but they should not be expos'd to the Sun, for while they are young, the great Heat of the Sun is very injurious to them. In *October* the Tubs should be placed under a Hot-bed Frame, where they may be cover'd in Frosty Weather with the Glasses; but in mild Weather, they should be expos'd to the open Air, for if they are kept too close, they will cast their Leaves. In *March* following these Plants may be transplanted out of the Tubs, in doing of which, you should be careful to take 'em up with as much Earth to their Roots as possible; then place each Plant into a Pot, which should be filled with light fresh Earth, giving them some Water to settle the Earth to their Roots, and place the Pots into a Frame again, where they should be cover'd with the Glasses in Cold Weather, or drying Winds, but they must be expos'd when the Weather is mild, and should be frequently water'd: In this Frame they may remain about a Month, after which they should be placed abroad in a shady Situation, observing to water them often in dry Weather. These Plants may remain two Years in the Pots, that they may be removed into Shelter in Winter, because they are somewhat tender while young; but afterwards they may be turned out of the Pots into the full Ground, observing to plant them in a pretty moist Soil, where they will make considerable Progress in a few Years.

MAHALEB; *vide* Cerasus.

MAJORANA; Marjoram.

The Characters are;

It is a Verticillate Plant, whose Flower is compos'd of one Leaf: The Galea (or Crest) is upright, roundish, and divided into two Parts: The

Barba (or Beard) is cut into three Segments, so as to appear almost like a quinquifid Flower: The Flowers are collected into a short, thick, round Head, and come out of a four-fold Order of Leaves, which are plac'd like Scales or Plates.

The Species are;

1. MAJORANA; *vulgaris*. C. B. P. Common sweet Marjoram.

2. MAJORANA; *rotundifolia, scutellata, exotica*. H. R. Par. Round-leav'd exotick Marjoram, with a Leaf shap'd like a Saucer.

3. MAJORANA; *Cretica, Origanifolia, villosa, satureja odore, corymbis majoribus albis*. Hairy Candia Marjoram, with an Origan Leaf, a savoury Smell, and large, round, tufted, white Heads.

The first of these Plants is an Annual, and must be sown every Year: The Seeds of this are annually brought from *Marseilles* and other Places in the South of *France*, where it grows spontaneously, for it never ripens Seeds in this Country. The Seeds of this Plant should be sown the latter End of *March*, or the Beginning of *April*, upon a dry, warm Spot of Ground; and when the Plants come up, they must be carefully clear'd from Weeds, (which, if permitted to grow, will soon over-run and destroy them) and in very dry Weather, the Beds should be often water'd, which will greatly promote the Growth of them.

In *June* these Plants will be pretty strong; at which time you should prepare some Beds of light rich Earth, into which you should transplant such of the Plants as require to be drawn out, where they come up too thick, at about four Inches Distance from each other, observing to water them, until they have taken Root; after which they will require

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require no farther Care, but only to clear them from Weeds, and these Plants will grow strong, and produce a greater Number of Heads (or Knots, as they are commonly call'd) than those which remain'd in the Seed-beds unremov'd; for which it is much prefer'd to it in the Markets, where it is call'd *Knotted Marjoram*, to distinguish it from that which is not so. Towards the latter End of *July* these Plants will flower, which is the proper Season to pull them up for Medicinal Use, when they should be hung up in a shady Place to dry.

The second Sort is a perennial Plant, which is preserv'd by some curious Persons in Pots, and plac'd in the Green-house in Winter. This Sort never produces Seeds with us, but is easily propagated by planting Cuttings or Slips during any of the Summer-months, in a Bed of light rich Earth, observing to water and shade them until they have taken Root: At *Michaelmas* these Plants should be taken up and planted in Pots fill'd with rich light Earth; and when they are settled, they should be remov'd into the Green-house, placing them near to the Windows, that they may have a good Share of free Air when the Weather is mild: you must often refresh them with Water, but never give them too much at once, for that will rot them. With this Management the Plants may be preserv'd fresh through the whole Year, and will be in a Condition to gather for Nosegays any Part of the Winter, and have as good a Scent as the *Sweet Marjoram*.

The third Sort was sent into *England* by *Sir George Wheeler* from *Smyrna*, where it grows in great Plenty. This Plant rises to the Height of two or three Feet, and

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becomes woody, but never produces any Seeds with us; tho' it is easily propagated by planting Slips or Cuttings in any of the Summer Months, after the manner as was directed for the common Sort, and must be hous'd in Winter, tho' it must not be kept too close; for it only requires to be protected from great Rains and Frost, but should have as much free Air as possible in mild Weather, otherwise it is subject to draw and grow very weak.

MALABAR-NUT; *vide* *Adhatoda*.

MALA ÆTHIOPICA; *vide* *Lycopericon*.

MALA ARMENIACA; *vide* *Armeniaca*.

MALA COTONEA; *vide* *Cydonia*.

MALA INSANA; *vide* *Melongen*.

MALACOIDES.

The Characters are;

It hath the Flower and Appearance of a Mallow; and hath a Fruit like that of a Bramble, but dry, which is compos'd of several Cells, collected into a Sort of little Head or Button, in which are contain'd many Kidney-shap'd Seeds.

There is but one Species of this Plant, at present, in the *English* Gardens, which is,

MALACOIDES; *Betonica folio*. *Tourn.* Malacoides, with a Betony-leaf.

This Plant is propagated by sowing the Seeds in *March*, upon a Bed of fresh light Earth; and when the Plants are come up, they should be transplanted into a warm dry Border, where they are to remain, (for this Plant does not care for being often remov'd) and some of them may be planted in Pots, that they may be shelter'd in Winter; for in very severe Frosts they are often

often destroy'd: The Summer following they will produce their Flowers in *June*, and if the Season be favourable, they will sometimes ripen Seeds, but this does not often happen in our Country. There is no great Beauty in this Plant, but it is preserv'd by such as are curious in Variety.

MALLOW; *vide* Malva.

MALLOW-TREE; *vide* Althæa.

MALPIGHIA; Barbadoes-Cherry; *vulgô*.

The Characters are;

It hath a small quinquefid Calix, which consists of one Leaf, having bifid Segments: The Flower consists of five Leaves, which expand in form of a Rose, having several Stamina collected in form of a Tube: The Ovary in the Bottom of the Flower-cup becomes a globular fleshy soft Fruit, in which is a single Capsule containing three stony winged Nuts.

The Species are;

1. MALPIGHIA; *mali punici facie*. *Plum. N. G. Malpighia*, with the Face of Pomegranate, commonly call'd in the West-Indies, Barbadoes-Cherry.

2. MALPIGHIA; *angustifolia, folio subtus spinoso*. *Plum. Nov. Gen. 46. Malpighia*, with a narrow Leaf, having Spines on the under-side.

3. MALPIGHIA; *latifolia, folio subtus spinoso*. *Plum. Nov. Gen. 46. Broad-leav'd Malpighia*, with Spines on the under-side of the Leaves.

4. MALPIGHIA; *humilis, illicis cocci-glandi fera foliis*. *Plum. N. G. 46. Dwarf Malpighia*, with Leaves like those of the Kermes Oak.

The first Sort in the *West-Indies*, rises to be fifteen or sixteen Feet high, where it produces great Quantities of a pleasant tart Fruit, for which Reason it is propagated in most of the Gardens in those Countries; but in *Europe* it is only pre-

serv'd as a Curiosity by such Persons as delight in Variety. It is easily propagated by Seeds (which should be procur'd from the *West-Indies*) and must be sown upon a Hot-bed in *February*; when the Plants are come up, they must be transplanted each into a separate small Pot fill'd with fresh light Earth, and plung'd into a Hot-bed of Tanners-bark, observing to shade them from the Violence of the Sun until they have taken Root, as also to water 'em from time to time as they may require; and when the Plants begin to acquire Strength, and the Season is warm, they should have a good Share of Air (especially in the Middle of the Day) by raising the Glasses with a Stone or Brick; and if the Glasses are wet, it will be proper to turn them, that those rancid Vapours may be dry'd up.

In *June* these Plants will have grown so as to fill the small Pots with their Roots; at which time they should be shaken out (preserving the Earth intire about their Roots) and plac'd into larger Pots, which should be fill'd up with the same light fresh Earth, and plung'd again into the Hot-bed, observing to water them as before, as also to give them plenty of Air in hot Weather; and in the Heat of the Day, when the Sun is very hot, it will be proper to shade the Glasses with Mats.

By thus managing them, they will grow eighteen Inches high before Winter, and have pretty strong Stems (provided they have had a sufficient Quantity of Air;) and in *October*, when the Nights are cold, they should be remov'd into the Stove, where they should be plung'd into the Tanner's-Bark with the *Papaw's*, and other *West-Indian* Plants;

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Plants; which Stove should be kept up to *Anana's* Heat, as mark'd on Mr. *Fowler's Thermometers*, observing to water them in the Winter with Water that has stood twenty-four Hours in the Stove, so as to have acquir'd a Warmth proportional to the Air of the House.

The *Spring* following they must be shifted into larger Pots, and again plung'd into Tanner's Bark, in which they should constantly be kept, if you would have them vigorous: tho' they will live in a warm Stove without the Bark; but then they will not make near the Progress, nor appear so beautiful, as if kept in the Tanner's Bark; and it is probable they may be brought to produce Fruit in Time, where the Stoves are good, and proper Care is taken of their Management.

The othere three Sorts do require the same Management as the former, but must be often refresh'd with Water, and may be used somewhat more hardily, for they do grow in a cooler Country. The second and third Sorts do grow as large as the first; but the third Kind is of very humble Growth, seldom rising above three Feet high in its native Country; and in *England*, grows very slow; for I have one Plant of this Kind in the Physick Garden, which is two Years old from Seeds, and not more than two Inches high, altho' it appears to be in very good Condition. The other three Sorts have flower'd in the Physick Garden, but I have not heard that there has been Fruit produced on any of these Plants in *Europe*.

MALT-DUST is accounted a great Enricher of barren Ground: It contains in it a natural Heat and Sweetness, which gives the Earth

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whereon it is laid a proper Fermentation, as those who live in Malting Countries have found by Experience.

Some are of Opinion, that there is not a greater Sweetener than *Malt-Dust*, where the Grounds are natural Clay, and have contracted a Sourness and Austerity, whether by reason of its having lain long untill'd, and unexpos'd to the Air, or by reason of Water having stood long thereon.

MALVA; Mallows.

The Characters are;

It hath a fibrose Root: The Leaves are round, or angular: The Flower consists of one Leaf, is of the expand'd Bell-shap'd Kind, and cut into five Segments almost to the Bottom: From the Centre rises a pyramidal Tube, for the most part loaded with many small Threads or Filaments: From the Centre of the Flower-cup rises the Pointal in the Tube, which becomes the Fruit, which is flat, round, and sometimes pointed, wrapt up, for the most part, within the Flower-cup, and divided into several Cells so dispos'd round the Axle, that each little Lodge appears most artificially jointed within the corresponding Striae or Channels: The Seed is, many times, shap'd like a Kidney.

The Species are;

1. MALVA; *vulgaris, flore majori, folio sinuato.* J. B. Common Mallow, with a large Flower.

2. MALVA; *sylvestris, folio sinuato, flore albo.* Sutherl. Common Mallow, with a large white Flower.

3. MALVA; *Sinensis, erecta, flosculis albis minimis.* China Upright Mallow, with small white Flowers.

4. MALVA; *foliis crispis.* C. B. P. The curl'd or turlow'd Mallow.

5. MALVA; *folio vario.* C. B. P. Mallow, with a variable Leaf.

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6. MALVA;

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6. MALVA; *Orientalis erectior, flore magno suave-rubente. T. Cor.* Upright Oriental Mallow, with a large beautiful red Flower.

The first of these Plants is found wild in most Parts of *England*, but is rarely cultivated in Gardens. This is the Sort commonly us'd in Medicine, with which the Markets are supply'd by the Herbfolks, who gather it in the Fields.

The second Sort is a Variety of the first, from which it differs in the Colour of the Flower: This is preserv'd by such as are curious in preserving great Varieties of Plants, but is rarely cultivated in other Gardens.

The third Sort was formerly sent from *China* as a Pot-herb, and hath been cultivated in some curious Gardens in *England*; though 'tis not likely to obtain here as an esculent Plant, since we have many others which are preferable to it for that Purpose. This is an annual Plant, which will propagate it self fast enough, provided it be permitted to scatter its Seeds, when they seldom fail to grow, and are often very troublesome when they have gotten Possession of the Ground.

The fourth Sort is preserv'd by some curious Persons for the Beauty of its Leaves, which are naturally furbeloe'd round their Edges: This is also an annual Plant, which will rise four or five Feet high, and propagate it self in the same manner as the former.

The fifth Sort is more rare than any of the former: It grows wild in *Spain* and *Italy*, from whence the Seeds were brought into *England*, and is preserv'd by the Lovers of Variety, but there is no great Beauty in the Plant.

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The sixth Sort is also an annual Plant, which commonly grows upright to the Height of three or four Feet, and produces great Numbers of beautiful red Flowers; which renders it the best worth propagating in large Flower-Gardens, where being plac'd in the middle of large Borders, it makes a beautiful Appearance.

The Seeds of these Plants should be sown in *March* upon a Bed of fresh light Earth; and when they are come up four Inches high, they should be transplanted where they are design'd to be continued, allowing 'em a large Distance; for if they are planted too close, they do not appear so well: but they are best when intermix'd with other Flowers of the same Growth, where they afford an agreeable Variety.

These Seeds may also be sown in *August*; and the Plants will endure the greatest Cold of our Climate, if plac'd on a dry Soil, and grow larger, and flower sooner than those sown in the *Spring*: or if the Seeds are permitted to scatter, they will come up as the two former Sorts, and thrive equally as well.

There are several other Sorts of *Mallows*, some of which are Natives of this Country: but as they are Plants of no great Beauty or Use, so it would be superfluous to mention them in this Place.

MALVA ARBOREA; *vide Althæa.*

MALVA ROSEA; Rose Mallow, or Hollyhock.

The Characters are;

It hath a larger and more expanded Flower than the Mallow, which closely adheres to the Stalk, and, in many Species, the Flowers

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are double, where the Petals occupy the Place of the Style: It is in every respect larger than the Common Mal-low; the Leaves are rougher, and the Plant grows almost shrubby.

The Species are;

1. MALVA ROSEA; *five hortensis*, flore albo. J. B. Single White Hollyhock.

2. MALVA; *hortensis*, flore simplici rubro. H. Eyf. Single Red Hollyhock.

3. MALVA ROSEA; *folio rotundo*, flore ex rubro nigricante. C. B. P. Hollyhock, with a blackish-red Flower.

4. MALVA ROSEA; *folio subrotundo*, flore simplici luteo. H. R. Par. Hollyhock, with a Single Yellow Flower.

5. MALVA ROSEA; *folio subrotundo*, flore pleno albo. C. B. P. Double White Hollyhock.

6. MALVA; *hortensis*, flore pleno, rubro. H. Eyf. Double Red Hollyhock.

7. MALVA ROSEA; *multiplex*, flore incarnato. H. Eyf. Hollyhock, with a Double Flesh-colour'd Flower.

8. MALVA; *hortensis*, flore pleno, atro-rubente. H. Eyf. Double Hollyhock, with a Dark-red Flower.

9. MALVA ROSEA; *folio subrotundo*, flore pleno, puniceo. C. B. P. Hollyhock, with a Double Scarlet Flower.

10. MALVA ROSEA; *folio subrotundo*, flore pleno, subluteo. H. R. Par. Hollyhock, with a Double Yellowish Flower.

There are some other Varieties of these Plants, which differ in the Colour of their Flowers: but as they are near to one or other of these Colours, and are either paler or deeper (none of the Sorts yet known being intirely different in Colour from those here mention'd;)

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so it would be needless in this Place to insert all their minute Distinctions, especially as they are seminal Variations, and seldom produce the same exact Colours again from Seeds.

These Plants are all propagated from Seeds, which should be sown upon a Bed of fresh Earth in March; and when the Plants are come up pretty strong, they must be transplanted out into Nursery-beds at about eight Inches Distance from each other, observing to water them until they have taken Root: After which they will require no farther Care until the Michaelmas following, but only to keep them clear from Weeds; at which time they should be transplanted into Rows two Feet asunder, and a Foot Distance in the Rows; in which Place they may continue until they flower, when you should mark all those with Double Flowers, which have good Colours, with Sticks, that they may be transplanted into the Borders of large Gardens at Michaelmas, where they will remain four or five Years, and produce their Flowers very strong: but when the Roots are much older they begin to decay, and do not produce their Stems so strong, nor are their Flowers so large; wherefore there should always be a Supply of young Plants rais'd from Seeds every third or fourth Year, in order to have the Flowers in Perfection: But it is the better way to change the Seeds every three or four Years, with some Person of Integrity who lives at a considerable Distance, and is exact to save Seeds from none but Double Flowers, and such as are well-colour'd; by which means you may preserve the Sorts well from degenerating: but if you

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constantly save the Seeds in the same Place, they will in a few Years become little worth.

The several Varieties of these Plants, when carefully intermix'd in large Wilderness Borders, or Avenues, afford an agreeable Prospect during their Season of flowering (which is commonly in July) but as they grow to a considerable Height, and spread pretty wide, so they take up too much Room, and appear unsightly in small Flower Gardens: They should also be supported with Stakes, otherwise they are subject to be broken down by strong Winds.

When the Stalks of these Plants begin to decay, they should be cut down pretty close to the Ground, to encourage them to shoot out fresh Heads for the succeeding Year, otherwise they sometimes rot and destroy the Roots.

MALUS; The Apple-Tree.

The Characters are;

The Tree groweth very large; the Branches spread (and are more depressed than those of the Pear Tree;) the Flower consists of five Leaves, which expand in form of a Rose; the Fruit is hollowed about the Foot-stalk, is for the most part roundish, and umbilicated at the Top, is fleshy, and divided into five Cells or Partitions, in each of which is lodg'd one oblong Seed.

The Species are;

1. **MALUS; sylvestris, acido fructu albo.** Tourn. The Crab Tree.

2. **MALUS; sylvestris, foliis ex albo eleganter variegatis.** Cat. Plant. Hort. The Crab Tree, with strip'd Leaves.

3. **MALUS; sylvestris, Virginiana, floribus odoratis.** Cat. Plant. Hort. Virginian Crab Tree, with sweet Flowers.

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4. **MALUS; fructifera, flore fugaci.** H. R. Par. The Fig Apple.

5. **MALUS; pumila, qua potius frutex, quam Arbor, fructu rubente & candido.** C. B. P. The Paradise Apple.

6. **MALUS; sativa, foliis eleganter variegatis.** Cat. Plant. Hort. Apple Tree, with strip'd Leaves.

The several Sorts of Apples which are at present esteem'd for their Fruit in the curious Gardens near London, may be seen under the Article of Apple, where a particular Account of their Planting, Pruning, &c. is fully laid down; to which I refer the Reader; and in this Place shall only take notice of the above-mention'd Sorts, which are only preserv'd as Curiosities, or for Stocks to graft the more generous Kinds of Fruit upon: The Crab-Tree is generally preferr'd to most other Sorts for this Purpose, it being the most durable of them, and not so liable to canker as those which are produc'd from Kernels of better Apples: but these should be obtain'd from Kernels, and not Suckers taken from the Woods, which are generally ill-rooted, and seldom make a handsome Stock; nor will they so readily join with the Cyon, for which Reason they should not be planted.

The Paradise Apple hath, of late Years, greatly obtained for Stocks to graft or bud upon; but these are not of long Duration; nor will the Trees grafted upon them ever grow to any Size, unless they are planted so low as that the Cyon may strike Root into the Ground, when it will be equal to no Stock, for the Graft will draw its Nourishment from the Ground; so that it is only by way of Curiosity, or for very small Gardens, that

that these Stock are proper, since there can never be expected any considerable Quantity of Fruit from such Trees.

The *Virginian Crab Tree* with sweet Flowers, is preserv'd by such Persons as are curious in collecting great Variety of Trees: It may be propagated by Budding or Grafting it upon the common *Crab* or *Apple-Tree*; but it is somewhat tender while young, wherefore it should be planted in a warm Situation, otherwise it will be subject to suffer by an extreme hard Winter. The Flowers of this Tree are said to be exceeding sweet in *Virginia*, where it grows in the Woods in great Plenty; but I could not observe much Scent in some of them which flower'd in *England* the last Year; so that I am in doubt whether the Sort at present in the Gardens is the very same with that of *Virginia*, or perhaps it may have degenerated by sowing the Seeds, which, I suppose, is the Way it was first obtain'd in *England*.

The *Fig-Apple* is suppos'd, by many Persons, to be produc'd without a previous Flower. But this Opinion is rejected by some curious Observers, who affirm, there is a small Flower precedes the Fruit, which is very fugacious, seldom continuing above a Day or two. Now, which of these Opinions is the right, I have not, as yet, had an Opportunity to determine, not having a Tree in my own Possession which is arriv'd at Maturity to produce Fruit; tho' it might reasonably be expected, that such, who have had Trees of this Kind several Years, might have determin'd this Point long ere this Time.

I remember an Account of a large Tree of this Kind, mention'd in a Letter from *New-England*, written by *Paul Dudley, Esq;* to the *Royal Society*, and publish'd in the *Philosophical Transactions*, Numb. 385. which was exceeding large, and produc'd great Quantities of Fruit, without any previous Flowers; but it grew at some Distance from his Habitation, and he having no other Opportunity to observe it strictly himself, but by visiting the Place two or three times about the Season of Flowering, and not being appriz'd of the sudden Decay of the Flowers, they might easily be suppos'd to have appear'd, and dropt off between the Times of his visiting the Place.

The two Sorts with strip'd Leaves are preserv'd by such as are curious in collecting such Varieties: These may be propagated by grafting or budding them upon the common *Apple* or *Crab-Tree*; but they should not be planted in a very rich Soil, which would cause them to grow very free, whereby their Leaves would become entirely green again.

MALUS ARMENIA; *vide Armeniaca.*

MALUS AURANTIA; *vide Aurantia.*

MALUS LIMONIA; *vide Limonia.*

MALUS MEDICA; *vide Citreum.*

MALUS PERSICA; *vide Persica.*

MALUS PUNICA; *vide Punica.*

MAMEI; The Mammee Tree.

The Characters are;

It hath a rosaceous Flower, which consists of several Leaves placed in a circular Order, from whose Cup arises the Pointal, which afterward becomes an almost spherical fleshy Fruit,

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Containing two or three Seeds enclos'd in hard rough Shells.

There is but one Species of this Tree known (*viz.*)

MAMEI; *magno fructu Persica sapore.* Plum. Nov. Gen. 44. The Mammee, with a large Fruit tasting like a Peach.

This Tree, in the *West-Indies*, grows to the Height of sixty or seventy Feet; the Leaves are large and stiff, and do continue green all the Year; the Fruit is as large as a Man's Fist; when ripe, is of a yellowish green Colour, and is very grateful to the Taste. It grows in great Plenty in the *Spanish West-Indies*, where the Fruit is generally sold in their Markets, and is esteemed one of the best Fruits of the Country. It also grows on the Hills in *Jamaica*, and has been transplanted into most of the *Caribbee* Islands, where it thrives exceeding well.

In *England*, there are some few of these Plants, which are preserved with great Care, by such as are curious in cultivating exotick Plants; but there are none of any considerable Size: So that we cannot expect to see either Fruit or Flowers for some Years. These Plants may be propagated by planting the Stones (which are often brought from the *West-Indies*) into Pots filled with light fresh Earth, and plunged into a Hot-bed of Tanners-Bark, observing to water the Earth whenever it appears dry. In about a Month the Plants will begin to appear above-ground, after which they must be frequently refresh'd with Water, and in hot Weather, the Glasses of the Hot-bed should be rais'd to let in fresh Air. In two Months the Roots of the Plants will have filled the Pots, when you should provide some Pots

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of a little larger Size, into which you should transplant the Plants, being careful to preserve as much Earth to their Roots as possible; then you should fill up the Pots with fresh light Earth, and plunge them into the Bark-bed again, observing to water and shade 'em until they have taken Root, after which they should be constantly refresh'd with Water (as you shall find they want it) and must have Air in hot Weather. In this Bed they may remain till *Michaelmas*, when they must be removed into the Bark-Stove, where they must constantly be kept, observing to refresh them with Water frequently, as also to clean their Leaves from the Filth they are apt to contract in the Stove; and the Spring following, they should be shifted into fresh Earth, and, if they require it, into larger Pots, and the Bark-bed must be fresh stir'd, and some new Tan mix'd therewith, to renew the Heat. This should be repeated as often as there may be a Necessity for it, which is at least three times a Year: In all other respects this Tree may be treated after the Manner directed for the Coffee-Tree.

MANCANILLA; The Manchineel Tree.

The Characters are;

It hath male Flowers (or Katkins) which are produced at remote Distances from the Embryo's on the same Tree; the Embryo becomes a round fleshy Fruit, in which is contained a rough woody Nut, enclosing four or five flat Seeds.

The Species are;

1. MANCANILLA; *Pyri facie* Plum. Nov. Gen. 50. The Manchineel, with the Face of a Pear-Tree.

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2. MANÇANILLA; *Aquifolii foliis*. Plum. Nov. Gen. 50. The Manchineel, with Leaves like Holly.

3. MANÇANILLA; *Lauri foliis oblongis*. Plum. Nov. Gen. 50. The Manchineel, with oblong Laurel Leaves.

The Manchineel is a Native of the West-Indies, where it grows on low sandy Land, or near Gullies, where Water runs. The three Sorts here mention'd, are distinguish'd by Botanists, but I believe their Difference is not remark'd by the Natives. They grow to be very large Trees, equal to the Size of an Oak, and are much esteemed for their Wood, which is sawn out into Planks, and brought over to England: It is used for Cabinets, Book-Cases, &c. and will polish very well; is of a beautiful Grain, and will last a long Time. In cutting down of these Trees, they are very careful to burn out the Juice of the Bark before they begin, otherwise the Persons are in Danger of losing their Eyes, by some of the Sap getting into them, which is of a milky Colour, and so very caustick, that it will raise Blisters on the Skin, and burn Holes in Linnen. The Fruit of this Tree, when ripe, is of the Colour and Size of a golden Pippen, for which many of the Europeans have taken it, and some by eating thereof, lost their Lives, and others have greatly suffered; the Flesh is not much thicker than a Crown-piece, and not very disagreeable to the Taste, but will corrode the Mouth and Throat. The Leaves of these Trees do also abound with a milky Juice, which is of the same Nature; so that it is dangerous being under their Drip: The Cattle, in America, never shelter themselves under them,

nor will any Vegetable scarcely grow under their Shade; yet the Goats do eat this Fruit, without any manifest Injury to themselves, or their Milk, which is not altered by this Food.

In England, there are some of these Trees preserved by Persons who are curious in propagating exotick Plants. They may be rais'd from Seeds, by putting the whole Nut into a Pot of fresh Earth, and then plunge it into a Hot-bed of Tanners-Bark, observing to refresh the Earth often with Water; from one of these Nuts will arise four or five Plants, which when grown about three Inches high, may be separated, and placed each into a small Pot filled with light Earth, and plunged again into the Hot-bed, observing to water and shade 'em until they have taken Root, after which, they must be managed as was before directed for the Mammee, to which I refer the Reader, to avoid Repetition.

MANDRAGORA; Mandrake.

The Characters are;

The Flower consists of one Leaf, in the Shape of a Bell, and is divided at the Top into several Parts: The Pointal afterwards becomes a globular soft Fruit, in which is contain'd many Kidney-shap'd Seeds.

The Species are;

1. MANDRAGORA; *fructu rotundo*. C. B. P. Common Mandrake, with a round Fruit.

2. MANDRAGORA; *flore sub carnaleo purpurascete*. C. B. P. Mandrake, with a purplish blue Flower.

These Plants are propagated by Seeds, which should be sown upon a Bed of light Earth soon after they are ripe; for, if they are kept until the Spring, they seldom succeed well; and, in the Spring, the Plants will appear above-ground,

when they should be carefully clear'd from Weeds; and, in very dry Weather, they must be refresh'd with Water, which will greatly promote their Growth: In this Bed they should remain till the Latter-end of *August* (observing always to keep them clear from Weeds) at which Time they should be taken up very carefully, and transplanted into the Places where they are to remain, which should be a light deep Soil, for their Roots do always run downward very deep; so that, if the Soil be wet, they are often rotted in Winter; and, if it be too near the Gravel or Chalk, they seldom thrive well; but, if the Soil be good, and they are not disturb'd, the Plants will grow to a large Size in a few Years, and will produce great Quantities of Flowers and Fruit, and they will abide a great many Years.

I have been inform'd, by some Persons of Credit, that one of these Roots will remain sound above fifty Years, and be as vigorous as a young Plant; but they should never be remov'd after their Roots have arriv'd to any considerable Size, which would break their lower Fibres, and so stunt the Plants, as that they will not recover their former Strength in two or three Years.

As to the feigned Resemblance of a Human Form, which the Roots of this Plant are said to carry, 'tis all Imposture, owing to the Cunning of Quacks and Mountebanks, who deceive the Populace and the Ignorant, with fictitious Images shap'd from the fresh Roots of *Briony* and other Plants: And what is reported as to the Manner of rooting up this Plant, by tying a Dog thereto, to prevent the cer-

tain Death of the Person who should dare to attempt it, and the Groans it emits upon the Force offer'd, &c. 'tis all a fulsome Fable; for I have taken up several large Roots of this Plant, some of which have been transplanted into other Places, but could never observe any particular Difference in this from any other deep-rooting Plant.

MAPLE; *vide* Acer.

MARACOCK; *vide* Granadilla.

MARJORAM; *vide* Majorana.

MARLE, is a Kind of Clay, which is become fatter, and of a more enriching Quality by a better Fermentation, and by its having lain so deep in the Earth as not to have spent or weaken'd its fertilizing Quality by any Product.

Marle is suppos'd to be much of the Nature of *Chalk*, and is believ'd to be fertile from its salt and oily Quality, and that it contracts its Salts from the Air, and for that Reason is the better the longer it is expos'd to it.

Marles are of different Qualities in different Counties of *England*. There are reckon'd to be four Sorts of *Marles* in *Sussex*, a Grey, a Blue, a Yellow, and a Red: Of these the Blue is accounted the best, the Yellow the next, and the Grey the next to that; and as for the Red, that is the least durable.

The *Marle* in *Sussex* is most like Fuller's-Earth, and therefore must certainly be the fattest; whereas that in the *North-Country* runs much upon the Loam.

In *Cheshire* they reckon six Sorts of *Marle*:

1. The *Cowshut Marle*, which is of a brownish Colour, with blue Veins in it, and little Lumps of Chalk or Lime-stone: It is commonly found under Clay or low black

black Land seven or eight Feet deep, and is very hard to dig.

2. *Stone, Stale, or Flag-Marle*, which is a kind of soft Stone, or rather Slate of a blue or bluish Colour, that will easily dissolve with Frost or Rain: This is found near Rivers and the Sides of Hills, and is a very lasting Sort of *Marle*.

In *Staffordshire* they esteem the *Dice* or *Slate-Marle* better than the *Clay-Marle*, and reckon the Blue best for Arable-Land, and the Grey for Pasture.

3. *Peat-Marle, or Delving-Marle*, which is close, strong, and very fat, of a brown Colour, and is found on the Sides of Hills, and in wet or boggy Grounds, which have a light Sand in them about two Feet or a Yard deep: This is accounted the strongest of all *Marles*, and is very good for sandy Land, but the Land must have a double Quantity laid on.

4. *Clay-Marle*; This resembles Clay, and is pretty near akin to it, but is fatter, and sometimes mix'd with Chalk-stones.

5. *Steel-Marle*; which lies commonly in the Bottom of Pits that are dug, and is of it self apt to break into cubical Bits: This is sometimes under sandy Land.

6. *Paper-Marle*; which resembles Leaves or Pieces of brown Paper, but something of a lighter Colour: This lies near Coals. This Sort is less esteem'd, it being hard to be got.

The Properties of any Sorts of *Marles*, and by which the Goodness of them may be best known, are better judg'd of by their Purity and Uncompoundedness, than their Colour; as if it will break in Pieces like Dice, or into thin Flakes, or is smooth like Lead-Ore, and is without a Mixture of Gravel or

Sand; if it will flake like Slate-stones, and shatter after wet, or will turn to Dust when it has been expos'd to the Sun; or will not hang and stick together when it is thoroughly dry, like tough Clay; but is fat and tender, and will open the Land it is laid on, and not bind; it may be taken for granted that it will be beneficial to it.

Some advise, to try the Goodness of *Marle*, by putting some of it into a Glass of Water; and they account it to be good, if it be so tender that the Lumps break and dissolve as soon as it comes to the Bottom: They also reckon it a good Sign, if it sparkle in the Water, and feel fat between the Fingers; but the surest Sign of its Goodness, is, if it dissolve by Wet or Frost.

Some approve of marling Land shallow, because, they say, it is apt to work downwards: Others, of laying it in deep at first, because the Sun wastes the Fatness of it.

Some recommend *Marles* for the improving of sandy loose Land: But the surest way to know what Lands it will suit best with, is, to try with a little of it on Lands suppos'd to be of a contrary Nature to it.

Marles do not make so good an Improvement of Lands the first Year, as afterwards.

Some advise, first to burn the *Marle* before it is laid on the Lands, which, if it be done, one Load will go as far as five.

The Quantity of the *Marle* ought to be in Proportion to the Depth of the Earth; and Over-marling has often prov'd of worse Consequence than Under-marling.

MARRUBIASTRUM; Bastard Horehound.

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The Characters are;

It is one of the verticillate Plants with a Lip-flower, consisting of one Leaf, whose Upper Lip is hollow like a Spoon, but the Lower Lip (or Beard) is cut into three Segments: Out of the Centre of the Flower rises the Pointal, attended, as it were, by four Embryo's, which afterwards turn to so many roundish Seeds. To which may be added, The little Flower-cup is cut into five small Segments, upon which are produc'd small Spines; and the Flowers grow in thick Whorles round the Stalk.

The Species are;

1. MARRUBIASTRUM; *vulgare*. Tourn. Common Bastard Hore-hound.

2. MARRUBIASTRUM; *sideritidis folio, caliculis aculeatis, flore candicante*. Tourn. Bastard Hore-hound, with an Ironwort Leaf, and a white Flower.

3. MARRUBIASTRUM; *sideritidis folio, caliculis, aculeatis, flore flavo cum limbo atro-purpureo*. Tourn. Bastard Hore-hound, with an Ironwort Leaf, and a yellow Flower with a dark purple Edge.

4. MARRUBIASTRUM; *folio Cardiacæ*. Bocco. Mus. Bastard Hore-hound, with a Mother-wort Leaf.

The first of these Plants is found wild amongst the Corn in Kent, and some other Counties in England, and is seldom cultivated, except in Botanick Gardens, for the sake of Variety, where are also some other Species of this Plant preserved for the same Purpose.

The other three Sorts are found wild in the Southern Parts of France and Italy, from whence the Seeds have been sent to the Curious in Botany in divers Parts of Europe.

These Plants may be all propagated by sowing their Seeds as

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soon as they are ripe, upon a Bed of light dry Soil, where they will come up the same Autumn, and abide the Cold of our ordinary Winters very well, and may be transplanted out in the Spring where they are to remain. In June they will flower, and their Seeds will be ripe in July or August.

MARRUBIUM; Hore-hound.

The Characters are;

It is a verticillate Plant with a Lip-Flower consisting of one Leaf, whose Upper-Lip (or Crest) is upright with two Horns; but the Under-Lip (or Beard) is divided into three Parts: The Pointal, which is fix'd to the Hinder-Part of the Flower, is attended by four Embryo's, which become so many oblong Seeds, inclos'd in the Flower-Cup.

The Species are;

1. MARRUBIUM; *album, vulgare*. C. B. P. Common White Hore-hound.

2. MARRUBIUM; *album, latifolium, peregrinum*. C. B. P. Broad-leav'd Foreign White Hore-hound.

3. MARRUBIUM; *album, angustifolium, peregrinum*. C. B. P. Narrow-leav'd Foreign White Hore-hound.

4. MARRUBIUM; *Alysson dictum, foliis profunde incis.* H. L. Hore-hound, call'd Madwort, with Leaves deeply cut in.

5. MARRUBIUM; *Hispanicum, spinum, foliis sericis argenteis*. Tourn. Low-Spanish Hore-hound, with Silken Silver-colour'd Leaves.

There are some other Species of this Plant, which are preserv'd in curious Botanick Gardens, for the sake of Variety: but as they are of no Use or Beauty, so it would be needless to enumerate them in this Place.

The first Sort here mention'd is us'd in Medicine: This is found wild

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wild in divers Parts of *England*. The other Sorts are only kept by such as delight in a Variety of Plants; for they have no great Beauty in their Flowers, nor are there any Uses to which they are applied.

They may be all propagated by sowing their Seeds in *March* upon a Bed of fresh light Earth; and when they are come up, they should be transplanted out into a dry Soil, at about eighteen Inches or two Feet asunder, where they will require no farther Culture than only to keep them clear from Weeds. But the fourth Sort is somewhat tender, and should have a warm Situation, otherwise it is in Danger of being kill'd by Frosts.

MARRUBIUM NIGRUM; *vide* Ballote.

MARTAGON; *vide* Lilium.

MARVEL OF PERU; *vide* Japala.

MARUM; Mastick.

The Characters are;

It is a Plant with a Lip-Flower, consisting of one Leaf, but has no Galea (or Crest) the Stamina supplying the Place of it; but the Under-Lip is divided into five large Segments, the middlemost of which is hollow like a Spoon: These Flowers are produc'd single from the Wings of the Leaves. To which may be added, It has the Appearance of a Shrub, and a hot volatile Smell.

We have but one Species of this Plant, at present, in *England*, which is,

MARUM; *Syriacum, vel Creticum*.
H. L. Syrian Mastick, *vulgô*.

This Plant is propagated by planting Cuttings, in any of the Summer Months, upon a Bed of fresh light rich Earth, observing to water and shade them until they have taken Root; after which, they may be transplanted either into Pots or

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Borders of the same fresh light rich Earth: But the greatest Difficulty is, to preserve it from the Cats, who will come from a great Distance to tear this Plant in Pieces, and from whom there is scarcely any guarding it, especially near Towns and Cities, where there are many of these Animals, unless by planting large Quantities of it; for it is observeable, that where there are but few Plants, the Cats will not leave them, until they have quite demolish'd them; whereas, when a large Quantity of the Plants are set in the same Place, they will not come near them.

Those Plants, which are put into Pots, should be shelter'd in Winter; but those in the full Ground, will abide the Cold of our ordinary Winters very well, provided they are planted on a warm dry Soil; and may be clipt into Pyramids or Balls, in which Figures I have seen some Plants of this Kind near three Feet high, which have endur'd the open Air several Years without any Covering.

MARUM VULGARE; *vide* Mastichina.

MARYGOLD; *vide* Caltha.

MARYGOLD (AFRICAN;) *vide* Tagetes.

MARYGOLD (FIG;) *vide* Ficoides.

MARYGOLD (FRENCH;) *vide* Tagetes.

MASTER-WORT; *vide* Imperatoria.

MASTICHINA; Herb Mastick, or Mastick-Thyme.

The Characters are;

The Leaves are like those of Thyme, but larger: The Stalks are upright and shrubby: The Cup of the Flower is long, narrow, and tubulous, but is spread open at the Top, where

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where it is cut into five long slender Segments, and has a Woolliness over every Part of it: The Galea (or Crest) of the Flower stands upright, and is divided into two Parts: The Beard (or Lower-Lip) is divided into three Segments, so that it appears somewhat like a Flower with five Leaves: The Flowers are collected into thick Whorles, and have a white Down growing upon the oblong Heads.

The Species are;

1. MASTICHINA; Boerb. Ind. Herb Mastick, or Mastick-Thyme.

2. MASTICHINA; folio minore. Herb Mastick, with a lesser Leaf.

There seems to be another Variety of this Plant in some of the English Gardens, which is of humbler Growth than the Common Sort: The Spikes of Flowers are also shorter and looser; but the Leaves are full as large as those of the common Sort. This I don't remember to have seen taken notice of in any of the Books of Botany, tho' it seems constantly to retain this Difference.

These Plants may be propagated by planting Cuttings, during any of the Summer Months, in a Bed of light rich Earth, observing to water and shade them, until they have taken Root: After which they may be transplanted into a light dry Soil, and have a warm Situation, where they will endure the Cold of our ordinary Winters very well, and produce great Quantities of Flowers in July, but seldom ripen their Seeds in this Country.

The Flowering Part of this Plant is order'd as an Ingredient in *Venice Treacle*, for which Purpose it should be propagated in *Physick-Gardens*. And the Plant having an agreeable Scent, and being easi'y

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cultivated, may merit a Place in the Borders of every good Garden, where it may be reduced to a regular Head, and will appear very handsome.

MATRICARIA; Feverfew.

The Characters are;

It hath a fibrose Root: The Leaves are conjugated, and divided into many Segments: The Cup of the Flower is squamose, and hemispherical: The Flowers grow in an Umbel upon the Top of the Stalks, and the Rays of the Flower are for the most Part white.

The Species are;

1. MATRICARIA; vulgaris, vel sativa. C. B. P. Common Feverfew.

2. MATRICARIA; vulgaris, vel sativa, caulibus rubentibus. H. L. Common Feverfew, with reddish Stalks.

3. MATRICARIA; vulgaris, vel sativa, floribus nudis bullatis. H. L. Common Feverfew, with naked Flowers.

4. MATRICARIA; vulgaris, vel sativa, florum petalis fistulosis. H. L. Common Feverfew, with the Petals of the Flower quill'd or fistulous.

5. MATRICARIA; vulgaris, vel sativa, florum petalis fistulosis & brevioribus. H. L. Common Feverfew, with short fistulous Petals.

6. MATRICARIA; flore pleno. C. B. P. Double-flower'd Feverfew.

7. MATRICARIA; flore pleno, petalis fistulosis. H. L. Feverfew, with Double fistulous Flowers.

8. MATRICARIA; flore pleno, petalis marginalibus planis, discoidibus fistulosis. H. L. Double Feverfew, with the Petals round the Border plain, but those in the middle of the Flower fistulous.

9. MATRICARIA; foliis elegantissime crispis, & petalis flore fistulosis. Tourn. Feverfew, with elegant curl'd

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curl'd Leaves, and the Petals of the Flowers fistulous.

The first of these *Species* (which is the Sort used in Medicine) is found wild upon Dunghills and uncultivated Places in divers Parts of *England*, but is cultivated in those Gardens which propagate medicinal Plants to supply the Markets. The other Sorts are preserv'd in curious Botanick Gardens for Variety: And the sixth, seventh, and eighth Sorts deserve a Place in the Borders of large Gardens, for the Beauty of their Flowers.

These Plants are propagated by their Seeds, which should be sown in *March*, upon a Bed of light Earth; and, when they are come up, they should be transplanted out into Nursery-beds, at about eight Inches asunder, where they may remain till the Middle of *May*, when they may be taken up, with a Ball of Earth to their Roots, and planted in the Middle of large Borders, where they will flower in *July* and *August*; and, if the Autumn be favourable, will produce ripe Seeds the same Year. But it is not advisable to permit them to seed, which often weakens and decays the Roots; therefore when their Flowers are past, you should cut down their Stems, which will cause them to push out fresh Heads, whereby the Roots will be maintain'd.

When the different Varieties of these Plants are intermix'd with other Plants of the same Growth, they make a handsome Appearance during their Season of Flowering, which commonly continues a full Month, or more, and renders them very valuable. But as their Roots seldom abide more than two or three Years, so fresh Plants should be rais'd from Seeds, to supply

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their Places; for altho' they may be propagated by parting their Roots either in Spring or Autumn, yet these seldom make so good Plants as those obtain'd from Seeds. But the sixth Sort seldom produces any good Seeds, therefore that must be propagated in this manner, or by planting Cuttings in the Spring or Summer Months, which will take Root, and make good Plants.

MAUDLIN; *vide* Ageratum.

MAYS; Indian Wheat.

The Characters are;

The whole Plant has the Appearance of a Reed: The Male Flowers are produc'd at remote Distances from the Fruit on the same Plant, growing, for the most part, in a Spike upon the Top of the Stalk: The Female Flowers are produced from the Wings of the Leaves, and are surrounded by three or four Leaves, which closely adhere to the Fruit until it is ripe.

The Species are;

1. MAYS; *granis aureis*. Tourn. Common Indian Wheat, with yellow Grains.

2. MAYS; *granis albicantibus*. Tourn. Indian Wheat, with white Grains.

3. MAYS; *granis rubris*. Tourn. Indian Wheat, with red Grains.

4. MAYS; *granis violaceis*. Tourn. Indian Wheat, with Violet-colour'd Grains.

5. MAYS; *minor, granis luteis*. Lesser Indian Wheat, with yellow Flowers.

6. MAYS; *minor, granis rubris*. Lesser Indian Wheat, with red Grains.

7. MAYS; *minor, granis violaceis*. Lesser Indian Wheat, with Violet-colour'd Grains.

There are some other Varieties in the Colour of the Grains of this Plant, which are chiefly occasion'd by

by the interchanging of the *Farina* of one Sort with that of another, whereby the Spikes are often of two or three different Colours, as it commonly happens when the several Colours are planted in the same Spot of Ground.

This Plant is seldom propagated in *England* but as a Curiosity in some curious Gardens; but in *America* it is one of their greatest Supports, and is there cultivated with great Care, in the following manner:

They dig the Ground well in the Spring, and, after having dress'd it well, they draw a Line across the whole Width of the Piece intended to be planted; then they raise little Hills of Earth at about three Feet Distance, into each of which they plant two or three good Seeds, covering them about an Inch thick with Earth; then they move the Line four Feet farther, continuing to do the same through the whole Spot of Ground, so that the Rows may be four Feet asunder, and the Hills in the Rows at three Feet Distance. Six Quarts of this Seed is generally allow'd to an Acre of Ground, which, if the Soil be good, will commonly produce fifty Bushels of Corn.

If, in the planting of this Corn, you observe to put the Grains of any one Colour in a Field by itself, and no other colour'd Grain stand near it, it will produce all of the same Colour again, (as hath been affirm'd by several curious Persons in that Country): but if you plant them in Rows of the different Colours alternately, they will interchange, and produce a Mixture of all the Sorts in the same Row, and frequently on one and the same Spike. Nay, it is affirm'd, that

they will mix with each other at the Distance of three or four Rods, provided there be no tall Fence or Building between to intercept 'em.

There is nothing more observ'd in the Culture of this Plant, but only to keep it clean from Weeds, by frequently hoeing the Ground, and, when the Stems are advanc'd, to draw the Earth up in a Hill about each Plant; which, if done after a Shower of Rain, will greatly strengthen them, and preserve the Ground about their Roots moist a long Time.

When the Corn is ripe, they cut off the Stems close to the Ground; and after having gather'd off the Spikes of Corn, they spread the Stalks to harden and dry, which they afterwards use for covering Sheds, &c. for which Purpose it is very useful to the Inhabitants of the warm Parts of *America*, as also for feeding their Cattle, while green, which is what they often use, when other Fodder is scarce.

But notwithstanding this Plant at present is only cultivated as a Curiosity in *England*, yet it is probable it might be propagated with good Success, and become a Piece of good Husbandry in such Places where *Beans* will not succeed, as particularly in light sandy Lands, (where the Inhabitants are at a great Loss for hearty Food for their Cattle) upon which this Plant will succeed extremely well, and supply the Want of *Beans*, perhaps better than any other Plant. The small Sort is what I would recommend to be sown in *England*, which is what the Inhabitants of *North-America* cultivate; and this will perfect its Seeds in less than four Months from sowing, as I have several times experienc'd; and even in some of the

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the most unfavourable Years it has ripen'd in full four Months from sowing.

In cultivating this Plant, the Ground should be well plough'd and dress'd, and the Rows of Corn placed four or five Feet asunder, and about two Feet asunder in the Rows; so that with a small Breast-plough the Ground may be often stirr'd, whereby the Weeds will be intirely destroy'd; which, if duly observ'd while the Plants are young, there will be no occasion to repeat it, after they are got up to a Height; for then the Plants will prevent the Growth of Weeds, by overshadowing the whole Ground.

The best Time to plant these Seeds is in the Beginning of *April*, when the Weather is settled; for if it be sown too soon, the cold Nights and wet Weather often destroy the Seeds; and if it be sown too late, and the Autumn should prove bad, it would not ripen well.

The large Sort, when cultivated as a Curiosity, should be sown upon a moderate Hot-bed in the Beginning of *March*; and in the Middle of *April* they should be carefully transplanted where they are to remain; and if the Season proves favourable, the Seeds will ripen very well: but without being thus early rais'd, this Sort seldom comes to much in this Country.

MEADOW SAFFRON; *vide Colchicum.*

MEDICA; Medick, or La Lucerne.

The Characters are;

It hath a papilionaceous (or Butterfly) Flower, out of whose Empalement rises the Pointal, which afterwards becomes an intorted Pod, somewhat like a Ram's Horn, in which are lodg'd Kidney-shap'd Seeds.

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The Species are;

1. MEDICA; *major erectior, floribus purpurascens.* J. B. Greater Upright Medick or La Lucerne, with purplish Flowers.

2. MEDICA; *major, erectior, floribus violaceis.* Tourn. Greater Upright Medick, or La Lucerne, with Violet-colour'd Flowers.

3. MEDICA; *major, erectior, floribus luteis.* Tourn. Greater Upright Medick, or La Lucerne, with yellow Flowers.

4. MEDICA; *major, erectior, floribus ex violaceo & luteo mixtis.* Tourn. Greater Upright Medick, or La Lucerne, with Violet and yellow Flowers mix'd.

These Plants do not greatly differ from each other but in the Colour of their Flowers; tho' I think That with the Violet-colour'd Flower produces the largest Leaves, and strongest Shoots; and That with the yellow Flowers, the smallest Leaves, and weakest Shoots: so that the Violet-colour'd Flowering is the best Sort to cultivate for Fodder.

This Plant is suppos'd to have been brought originally from *Media*, and from thence had its Name *Medica*: It is by the Spaniards call'd *Alfafa*; by the French, *La Lucerne*, and *Grande Trefle*; and by several Botanick Writers it is call'd *Fœnum Burgundiacum*, i. e. *Burgundian Hay*. But there is little Room to doubt of this being the *Medica* of *Virgil*, *Columella*, *Palladius*, and other ancient Writers of Husbandry, who have not been wanting to extol the Goodness of this Fodder, and have given Direction for the Cultivation of it in those Countries where they liv'd.

But notwithstanding it was so much commended by the Antients, and hath been cultivated to so good Purpose

Purpose by our Neighbours in *France* and *Switzerland* for many Years, it hath not as yet found Reception in our Country, in any considerable Quantity: Tho' it is evident, it will succeed as well in *England* as in either of the before-mention'd Countries, being extreme hardy, and resisting the severest Cold of our Climate: Nay, I have had the Seeds which have happen'd to be scatter'd upon the Ground in Autumn, come up and endure the Cold of a severe Winter, and make very strong Plants.

About the Year 1650, the Seeds thereof were brought over from *France*, and sown in *England*: but whether for want of Skill in its Culture, whereby it did not succeed, or that People were so fond of going on in their old beaten Road, as not to try the Experiment, whether it would succeed here or not, was the Occasion of its being intirely neglected in *England*, I cannot say. However, I hope, before I quit this Article, to give such Directions for its Culture, as will encourage the People of *England* to make farther Trial of this valuable Plant, which grows in the greatest Heat, and also in very cold Countries, with this Difference only, that in very hot Countries, such as the *Spanish West-Indies*, &c. where it is the chief Fodder for their Cattle at this time, they cut it every Month, whereas in cold Countries it is seldom cut oftner than two or three times a Year. And it is very likely that this Plant will be of great Service to the Inhabitants of *Barbadoes*, *Jamaica*, and the other hot Islands in the *West-Indies*, where one of the greatest Things they want is Fodder for their Cattle; since, by the Account given of this Plant by *Pere Fuilleé* it thrives ex-

ceedingly in the *Spanish West-Indies*, particularly about *Lima*, where they cut it every Week, and bring it into the Market to sell, and is there the only Fodder cultivated.

It is also very common in *Languedoc*, *Provence*, and *Dauphiné*, and all over the Banks of the *Rhone*, where it produces abundantly, and may be mowed five or six times in a Year. Horses, Mules, Oxen, and other domestick Cattle love it exceedingly, but above all when it is green, if they are permitted to feed on it; and especially the Black Cattle, which will feed very kindly upon the dry'd Plant; the Excess of which is by many People thought to be very dangerous: But it is said to be exceeding good for Milch-Cattle, to promote their Quantity of Milk; and is also said to agree with Horses the best of all, tho' Sheep, Goats, and most other Cattle will feed upon it.

The Directions given by all those who have wrote of this Plant, are very imperfect, and, generally, such as if practis'd in this Country, will be found intirely wrong; for most of them order the mixing of this Seed with *Oats* or *Barley*, (as is practis'd for *Clover*); but in this Way it seldom comes up well, and if it does, it will draw up so weak by growing amongst the Corn, as not to be recover'd under a whole Year, if ever it can be brought to its usual Strength again.

Others have directed it to be sown upon a low, rich, moist Soil, which is found to be the worst next to a Clay of any for this Plant; in both which the Roots will rot in Winter, and in a Year or two the whole Crop will be destroy'd.

But the Soil in which this Plant is found to succeed best in this Country, is a light, dry, loose, sandy Land,

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Land, which should be well plough'd and dres'd, and the Roots of all noxious Weeds, such as *Couch-grass*, &c. destroy'd, otherwise these will overgrow the Plants while young, and prevent their Progress.

The best Time to sow the Seed is about the Beginning of *April*, when the Weather is settled and fair; for if you sow it when the Ground is very wet, or in a rainy Season, the Seeds will burst and come to nothing, (as is often the Case with several of the Leguminous Plants) therefore you should always observe to sow it in a dry Season; and if there happens some Rain in about a Week or ten Days after it is sown, the Plants will soon appear above-ground.

But the Method I would direct for the sowing these Seeds, is as follows: After having harrow'd the Ground very fine, you should make a Drill quite across the Ground about an Inch deep, into which the Seeds should be scatter'd very thin; then cover them over about half an Inch thick, or somewhat more with the Earth; then proceed to make another Drill about two Feet from the former, sowing the Seeds therein in the same manner as before, and so proceed through the whole Spot of Ground, allowing two Feet Distance between Row and Row, and scatter the Seeds very thin in the Drills. In this manner, an Acre of Land will require about six Pounds of Seeds; for when it is sown thicker, if the Seed grows well, the Plants will be so close as to spoil each other in a Year or two, the Heads of them growing to a considerable Size, as will also the Roots, provided they have Room. I have measur'd the Crown of one Root, which was in my Possessi-

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on, eighteen Inches Diameter, from which I cut near four hundred Shoots at one time, which is an extraordinary Increase, and this upon a poor, dry, gravelly Soil, which had not been dung'd for many Years, but the Root was at least ten Years old; so that if this Crop be well cultivated, it will continue many Years, and be equally as good as when it was first sown, for the Roots do generally run down very deep in the Ground, provided the Soil be dry; and although they should meet a hard Gravel a Foot below the Surface, yet their Roots would penetrate it and make their Way downward, as I have experienc'd, having taken up some of them which were above a Yard in Length, and had run above two Feet into a Rock of Gravel, which was so hard as not to be loosen'd without Mattocks and Crows of Iron, and that with much Difficulty.

The Reason for directing this Seed to be sown in Rows, is, that the Plants may have Room to grow; and for the better stirring the Ground between them, to destroy the Weeds, and encourage the Growth of the Plants, which may be very easily effected with a small Breast-Plough, just after the cutting the Crop each time, which will cause them to shoot again in a very little time, and be much stronger than in such Places where the Ground cannot be stirred: But you can't pretend to use a Plough the first Season amongst it, until the Plants have taken good Root in the Ground; therefore when they first come up, the Ground between should be hoed: And if in doing of this you cut up the Plants where they are too thick, it will cause the remaining to be
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much stronger. This Hoeing should be repeated two or three times while the Plants are young, according as the Weeds are produc'd, observing always to do it in dry Weather, that the Weeds may the better be destroy'd, for if it be done in moist Weather, they will root and grow again.

With this Management, the Plants will grow to the Height of two Feet or more by the Beginning of *August*, when the Flowers will begin to appear; at which time it should be cut, observing to do it in a dry Season, and keep it often turn'd, that it may soon dry, and be carry'd off the Ground, for if it lie long upon the Roots, it will prevent their shooting again: After the Crop is taken off, you should stir the Ground between the Rows with a Breast-Plough, to kill the Weeds and loosen the Surface, which will cause the Plants to shoot again in a short time, so that by the Beginning of *September*, there will be Shoots four or five Inches high; when you may turn in Sheep upon it to feed it down, for it will not be fit to cut again the same Season, nor should the Shoots be suffer'd to remain upon the Plants, which would decay when the frosty Weather comes on, and fall down upon the Crown of the Roots, and prevent their shooting early the succeeding *Spring*.

So that the best Way is to feed it until *November*, when it will have done shooting for that Season: But it should not be fed by large Cattle the first Year, because the Roots being young would be in danger of being destroy'd either by their trampling upon them, or their pulling them out of the Ground: But Sheep will be of Service to the Roots by dunging the

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Ground, and they will not eat it too close, so as to endanger the Crown of the Roots. The Beginning of *February*, the Ground between the Roots should be again stirred with the Plough, to encourage them to shoot again; but in doing of this, you should be careful not to injure the Crown of the Roots, upon which the Buds are at that time very turgid, and ready to push. With this Management (if the Soil be warm) by the Beginning of *March* the Shoots will be five or six Inches high, when, if you are in want of Fodder, you may feed it down till a Week in *April*: After which it should be suffer'd to grow for a Crop, which will be fit to cut the Beginning of *June*; when you should observe to get it off the Ground as soon as possible, and stir the Ground again with the Plough, which will forward the Plants shooting again, so that by the Middle or latter End of *July* there will be another Crop fit to cut, which must be managed as before: After which, it should be fed down again in *Autumn*, and as the Roots by this time will have taken deep Hold in the Ground, so there will be little Danger of hurting them, if you should turn in larger Cattle; but you must always observe not to suffer them to remain after the Roots have done shooting, lest they should eat down the Crown of the Roots below the Buds, which would considerably damage, if not destroy them.

In this manner you may continue constantly to have two Crops to cut, and two Feedings upon this Plant; and in good Seasons there may be three Crops cut, and two Feedings, which will be a great Improvement, especially as this

this Plant will grow upon dry barren Soils, where Grass will come to little, and be of great Use in dry Summers when Grass is often burnt up. And as it is an early Plant in the *Spring*, so it will be of great Service when Fodder falls short at that Season; when it will be fit to feed at least a Month before Grass or Clover; for I have had this Plant eight Inches high by the tenth of *March*, at which time the Grass in the same Place has scarcely been one Inch high.

That the Cold will not injure this Plant, I am fully satisfy'd, for in the very cold Winter *Anno 1723*, I had some Roots of this Plant which were dug up in *October*, and laid upon the Ground in the open Air till the Beginning of *March*; when I planted them again, and they shot out very vigorously soon after, nay even while they lay upon the Ground, they struck out Fibres from the Under-side of the Roots, and had begun to shoot green from the Crown of the Roots. But that Wet will destroy the Roots, I am fully convinc'd, for I sow'd a little of the Seed upon a moist Spot of Ground for a Trial, which came up very well, and flourish'd exceedingly during the Summer-season; but in Winter, when the great Rains fell, the Roots began to rot at Bottom, and before the Spring, were most of them destroy'd.

The best Places to procure the Seed from, are *Switzerland*, and the Northern Parts of *France*, which succeed better with us than that which comes from a more Southern Climate; But this Seed may be sav'd in *England* in great Plenty; in order to which, a small Quantity of the Plants should be suffer'd to grow uncut till the

Seeds are ripe; when it must be cut, and laid to dry in an open Barn where the Air may freely pass through, but the Seed must be defended from the Wet, for if it be expos'd thereto, it will shoot while it remains in the Pod, whereby it will be spoil'd: When it is quite dry, it must be thrash'd out and cleans'd from the Husk, and preserv'd in a dry Place till the Season for sowing it: And this Seed sav'd in *England* is much preferable to any brought from Abroad, as I have several times experienc'd; the Plants produc'd from it having been much stronger than those produc'd from *French*, *Helvetian*, or *Turkey* Seeds, which were sown at the same Time, and on the same Soil and Situation.

I am inclinable to think, that the Reason of this Plant not succeeding, when it has been sown in *England*, has either been occasion'd by the sowing it with Corn, with which it will by no means thrive; (for tho' the Plant be very hardy when grown pretty large, yet at its first coming up, if it be incommoded by any other Plants or Weeds, it seldom does well; therefore it should always be sown by itself, and carefully clear'd from Weeds until it has Strength, after which it is not easily destroy'd:) Or perhaps People have sown it at a wrong Season, or in wet Weather, whereby the Seeds have rotted and never come up, which hath discourag'd their attempting it again: But however the Success has been, I dare aver, that if the Method of sowing and managing of this Plant, which is here laid down, be duly follow'd, it will be found to thrive as well as any other Sort of Fodder now cultivated

ted in *England*, and will continue much longer; for if the Ground be duly stirred between each Crop, and the last Crop fed, as hath been directed, the Plants will continue in Vigour twenty Years or more without renewing, provided they are not permitted to seed, which will weaken the Roots more than four times cutting it would do.

The Hay of this Plant should be kept in close Barns, it being too tender to be kept in Reeks open to the Air as other Hay; but it will remain good, if well dry'd before it be carry'd in, three Years. The People abroad reckon an Acre of this Fodder sufficient to keep three Horses all the Year round.

MEDICA COCHLEATA; Snail-Trefoil.

The Characters are;

These Plants differ from the former in the Fruit, which of these Kinds are shap'd like a Snail.

There are great Numbers of Sorts of this Plant which are preserv'd in Botanick Gardens for Variety; but I shall in this Place only mention two or three of the most curious Sorts, which are cultivated in Gardens for the Oddness of their Fruit.

The Species are;

1. **MEDICA**; *scutellata*. *f. B.* The Snail-Trefoil, commonly call'd in the Seed-shops Snails.

2. **MEDICA**; *orbiculata*. *f. B.* Flat, round Snail-Trefoil.

3. **MEDICA**; *cochleata, spinosa, echinis magnis, utrinque turbinatis, cum spinulis reflexis*. *Raii Hist.* Prickly cochleated Medick, with a large Head turbinated on every Side with reflex'd Spines, commonly call'd, Horns and Hedge-hog.

4. **MEDICA**; *marina*. *Lob. Icon.* Sea Medick or Snail-Trefoil.

The two first Sorts are common in the *English* Gardens, their Seeds being frequently sold in the Seed-shops in *London*; but the third Sort is pretty rare at present in *England*.

The three Sorts may be propagated by sowing their Seeds upon a warm dry Border the Beginning of *April*, observing always to do it in dry Weather; for if the Ground be very wet, or there should happen much Rain soon after they are put into the Earth, it very often bursts and destroys the Seeds; but if some gentle Showers fall about a Week or ten Days after the Seeds are sown, it will bring up the Plants in a short Time after. When they are come up, they should be carefully clear'd from Weeds, and thinn'd out to about a Foot asunder or more (for they must remain where they were sown, seldom succeeding when transplanted;) and after this, they will require no farther Care but only to keep them clear from Weeds; and in *July* they will flower, and their Fruit will ripen in a short Time after: When the Plant is in full Beauty, the first Sort, at a small Distance, will appear as if it had a great Number of *Snails* upon it; and the third Sort, having large rough Heads, will make a very good Appearance: For which singular Oddness, a good Garden should always have a few Plants of each Sort, especially since they require very little Care to cultivate them.

When the Fruit is full ripe, it should be gather'd and laid by in a dry Place for the Seeds, for if they are permitted to remain upon the Plants, and there should Rain happen, the Seeds would sprout in the Heads, and be destroy'd.

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The fourth Sort is a perennial Plant, which is preserv'd by such Persons as are very curious in collecting great Variety of odd Plants. This may be propagated by sowing the Seeds, as the former, or by planting Cuttings during any of the Summer-Months, which if water'd and shaded, will take Root in a short Time; after which, they must be planted in Pots fill'd with light sandy Earth, and shelter'd in Winter under a Hot-bed Frame, where they may have a great Share of free Air in mild Weather, and only require to be skreen'd from hard Frost. This Plant is preserv'd for the beautiful Whiteness of its Leaves, which when intermix'd with other low Plants, makes a pretty Variety.

MEDICAGO; Moon-Trefoil.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement arises the Pointal, which afterwards becomes a plain orbiculated Fruit, shap'd somewhat like a Half-Moon; in which are contain'd Kidney-shap'd Seeds.

The Species are;

1. MEDICAGO; *annua, trifolii facie*. Tourn. Annual Moon-Trefoil, with the Appearance of Trefoil.

2. MEDICAGO; *Vulneraria facie, Hispanica*. Tourn. Spanish Moon-Trefoil, with the Appearance of *Vulneraria*.

3. MEDICAGO; *trifolia, frutescens, incana*. Tourn. Shrubby Three-leav'd hoary Moon-Trefoil, by many suppos'd to be the true *Cytisus* of Virgil.

The two first Sorts are annual Plants, which are preserved in Botanick Gardens for Variety, more than any singular Beauty or Use: These may be propagated by sowing their Seeds in the Beginning of April, upon a Bed of light

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Earth, in the Places where they are to remain; for they seldom succeed when they are transplanted; and when they come up, they should be clear'd from Weeds, and thinn'd to the Distance of a Foot asunder; after which, they will require no farther Care, but only to keep them clear from Weeds, and in July they will flower, and their Seeds will be perfected in August. The Seed-vessels of these Plants being shap'd like Half-Moons, is the only remarkable Difference between them and the *Medica's*.

The third Sort grows to be a strong Shrub, and will rise to the Height of five or six Feet, and may be reduc'd to a regular Head, when it will appear very beautiful: But it should not be cut too often, which would prevent its Flowering; for if the Shoots are permitted to grow without much Trimming, they will produce Flowers most Parts of the Year, which, together with the Beauty of its Silver colour'd Leaves, renders it worthy of a Place in every good Garden.

This Plant may be propagated by sowing the Seeds, either upon a moderate Hot-bed, or a warm Border of light Earth, in the Beginning of April; and when the Plants come up, they should be carefully clear'd from Weeds: But they should remain undisturb'd, if sown in the common Ground, 'till the April following; but if on a Hot-bed, they should be transplanted about Midsummer into Pots, placing them in the Shade until they have taken Root: After which, they may be remov'd into a Situation where they may be screen'd from strong Winds, in which they may abide 'till the Latter-end of October, when they must

must be put into a Frame, in order to shelter 'em from hard Frosts; for those Plants which have been brought up tenderly, will be liable to suffer by hard Frosts, especially while they are young. In *April* following these Plants may be shaken out of the Pots, and placed into the full Ground where they are design'd to remain, which should be in a light Soil, and a warm Situation, in which they will endure the Cold of our ordinary Winters extremely well, and continue to produce Flowers most part of the Year.

Those also which were sown in an open Border may be transplanted in the *April* following in the same Manner: But in doing of this, you must be careful to take 'em up with a Ball of Earth to their Roots, if possible; as also to water and shade 'em until they have taken Root; after which, they will require little more Care than to keep 'em clear from Weeds, and to prune their Heads once a Year, *i. e.* About the Beginning of *July*, in order to reduce them to a regular Figure: But you should never prune them early in the *Spring*, nor late in the *Autumn*; for if Frost should happen soon after they are pruned, it will destroy the tender Branches, and, many times, the whole Plant is lost thereby.

These Plants have been constantly preserv'd in the Green-house, supposing 'em very tender: But I have had large Plants of this Kind, which have remain'd in the open Air in a warm Situation many Years without any Cover, and have been much stronger, and flower'd better, than those which were housed: Though, indeed, it will be proper to keep a Plant or

two in Shelter, lest, by a very severe Winter (which sometimes happens in *England*) the Plants abroad should be destroy'd.

They may also be propagated by Cuttings, which should be planted in *April*, upon a Bed of light Earth, and water'd and shaded until they have taken Root; after which they may be expos'd to the open Air, but they should remain in the same Bed till the *April* following before they are transplanted; by which Time they will have made strong Roots, and may be remov'd then with Safety to the Places where they are to remain, observing (as was before directed) to water and shade them until they have taken Root: After which you may train them up with strait Stems, by fastening them to Sticks, otherwise they are apt to grow crooked and irregular; and when you have got their Stems to the Height you design them, they may then be reduc'd to globular Heads, and with pruning their irregular Shoots every Year, they may be kept in very good Order.

This Plant grows in great Plenty in the Kingdom of *Naples*, where the Goats feed upon it, with whose Milk the Inhabitants make great Quantities of Cheese: It also grows in the Islands of the *Archipelago*, where the *Turks* use the Wood of these Shrubs to make Handles to their Sabres; and the *Calogers* of *Patmos* make their Beds of this Wood.

This is, as hath been before observ'd, by many People suppos'd to be the *Cytisus* of *Virgil*, *Columella*, and the old Writers in Husbandry, which they mention as an extraordinary Plant, and worthy of Cultivation for Fodder; from whence
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several Persons have recommended it as worth our Care in *England*. But however useful this Plant may be in *Crete*, *Sicily*, *Naples*, or those warmer Countries, yet I am persuaded it will never thrive in *England*, so as to be of any real Advantage for that Purpose; for in severe Frost it is very subject to be destroy'd, or at least so much damag'd as not to recover its former Verdure before the Middle or latter End of *May*; and the Shoots which are produc'd, will not bear cutting above once in a Summer, and then will not be of any considerable Length; and the Stems growing very woody, will render the cutting of it very troublesome: So that upon the Whole, it can never answer the Trouble and Expence in cultivating it, nor is it worth the Trial, since we have so many other Plants preferable to it; though in hot, dry, rocky Countries, where few other Plants will thrive, this may be cultivated to great Advantage, since in such Situations this Plant will live many Years, and thrive very well.

But however unfit this may be for such Uses in *England*, yet for the Beauty of its hoary Leaves, which will abide all the Year, together with its long Continuance in Flower, it deserves a Place in every good Garden, where being intermix'd with Shrubs of the same Growth, it makes a very agreeable Variety.

MEDLAR; *vide* *Mespilus*.

MELAMPYRUM; Cow-Wheat.

The Characters are;

The Leaves grow opposite by Pairs: The Flower consists of one Leaf, is of an anomalous personated Figure, and divided into two Lips; the uppermost of which has a Spur, but the under

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one is entire: The Fruit is round, and divided into two Cells, containing Seeds resembling Grains of *Wheat*.

The Species are;

1. MELAMPYRUM; *luteum, latifolium*. C. B. P. Yellow broad-leav'd Cow-Wheat.

2. MELAMPYRUM; *luteum, angustifolium*. C. B. P. Narrow-leav'd Yellow Cow-Wheat.

3. MELAMPYRUM; *Coma purpurascens*. C. B. P. Cow-Wheat, with purplish Tops.

The two first Sorts are very common in Woods and shady Places, growing near the Foot of Trees in divers Parts of *England*, and are never cultivated in Gardens.

The third Sort is very rarely found wild in *England*; but, in *West-Friesland* and *Flanders* it grows very plentifully among the Corn, and *Clusius* says, it spoils their Bread, making it dark, and that those who eat of it, us'd to be troubled with Heaviness of the Head, in the same manner as if they had eaten *Darnel* or *Cockle*; but Mr. Ray says, He has eat of this Bread very often, but could never perceive that it gave any disagreeable Taste, or that it was accounted unwholesome by the Country People, who never endeavour to separate it from the Corn; and *Tabernemontanus* declares, He has often eaten it without any Harm, and says, it makes a very pleasant Bread. It is a delicious Food for Cattle, particularly for fattening of *Oxen* and *Cows*: For which Purpose it may be cultivated in the same manner as hath been directed for the *Fagopyrum* or *Buck-Wheat*: It loves a light sandy Soil.

MELIANTHUS; Honey-Flower.

The Characters are;

It hath a perennial Root, and the Appearance of a Shrub: The Leaves are like those of Burnet: The Cup of the Flower is divided into several Parts: The Flower consists of four Leaves, and is of an anomalous Figure: The Petals (or Leaves) are plac'd sometimes in the Shape of a Fan, and at other times are of a conical Figure: The Ovary becomes a Fruit resembling a Bladder four corner'd, divided into four Cells, and pregnant with roundish Seeds.

The Species are;

1. MELIANTHUS; *Africanus*. H. L. The large Honey-flower, vulgarly call'd, The Locus or Wild Honey.

2. MELIANTHUS; *Africanus*, minor, *fœtidus*. Com. Rar. The smaller stinking Honey-flower.

The first of these Plants is pretty common in many English Gardens, where it is preserv'd as a Curiosity. This produces large Spikes of Chocolate-colour'd Flowers in May; in each of which is contain'd a large Quantity of a black sweet Liquor, from whence it is suppos'd to derive its Name.

This Plant was formerly preserv'd in Green-houses as a tender Exotick; but, if planted in a dry Soil, and a warm Situation, will endure the Cold of our ordinary Winters very well; and if, in a severe Frost, the Tops of them should be destroyed, yet the Roots will abide, and put forth again the succeeding Spring, so that there is no great Danger of losing it; and the Plants which grow in the open Air, do always flower much better than those which are preserv'd in the Green-house, as being less drawn, which often prevents their producing any Flowers.

This Plant may be propagated by taking off its Suckers or Side-shoots any Time from March to September, observing to chuse such as are furnish'd with Fibres; and after they are planted, you must water, and shade them, until they have taken Root, after which they will require no farther Care but to keep them clear from Weeds: They may also be propagated by planting Cuttings, during any of the Summer Months; which, if water'd and shaded, will take Root very well, and may afterwards be transplanted where they are design'd to remain.

The second Sort is less common than the former, and only to be found in some curious Collections of Plants, tho' it seems to be equally as hardy as the former. This produces lesser Spikes of Flowers, but they are much more beautiful than the former, their Flowers having a Mixture of Red, Green and Yellow. This produces its Flowers in May, and sometimes perfects its Seeds with us, by which it may be propagated: And the Plants obtain'd from such Seeds, would be hardier than those which come from Abroad, or are rais'd from Slips. This may be propagated in the same Manner as the former, and requires much the same Culture, though it is commonly preserv'd in the Green-house; but I have seen Plants of this Kind which were growing in the Gardens of Charles du Bois, Esq; at Mitcham in Surrey, under a warm Wall, which produc'd a greater Quantity of Flowers, and ripened their Seeds better than any of those Plants which were preserv'd in the Green-house. This Sort commonly grows to a greater Height than the former,

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mer, and its Branches become more woody.

MELILOTUS; Melilot.

The Characters are;

It hath a papilionaceous Flower; out of whose Empalement arises the Pointal, which afterwards becomes a naked Capsule, that is not hid in the Empalement (as in Trefoil) pregnant with one or two roundish Seeds: To these Notes may be added, the Leaves grow by Threes on the Foot-stalks, and the Flowers are produc'd in a Spike.

The Species are;

1. MELILOTUS; *officinarum*, Germania. C. B. P. Common Melilot.

2. MELILOTUS; *fruticosa, candida, major*, Mor. Hist. Shrubby Melilot, with a white Flower.

3. MELILOTUS; *major, odorata, violacea*. Mor Hist. Greater sweet-scented Melilot, with a Violet-colour'd Flower, commonly call'd Sweet Trefoil, or Lotus Urbana.

There are several Species of this Plant, which are preserv'd in curious Botanick Gardens for Variety; but as they are Plants of little Beauty or Use, so I shall pass them over without naming. The first Sort here mention'd, is that used to make the *Melilot Plaster*: This is found wild in several Parts of England, but is generally cultivated in some Gardens near London, from whence the Markets are supply'd with it. The second Sort is by some suppos'd to be only a Variety of the first, differing in the Colour of its Flowers; but this is a Mistake, for the whole Plant has a very different Appearance, the Leaves being narrower, the Stalks much taller, nor has it near so strong a Scent. The third Sort is sometimes used in Medicine, but

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is rarely cultivated except in Botanick Gardens.

These may be all cultivated by sowing their Seeds in *March*, upon a Bed of light Earth; and when the Plants are come up, they should either be transplanted out, or hoed, so as to leave 'em eight or ten Inches asunder (especially the two first Sorts, which will abide two or three Years, and grow very large) observing to keep them clear from Weeds, and the *August* following they will flower; when they may be cut for Use, which will cause them to push out new Shoots, whereby the Roots will be maintain'd through the Winter, and flower in *May* or the Beginning of *June* the succeeding Year. The cutting off the Shoots when the Plant is in flower, will maintain the Roots much longer than if they were permitted to stand till the Seeds are ripe, so that those Roots you intend for Seeds, must not be depended on to stand very long.

The third Sort is an annual Plant, which may be sown as the two former, but should not be transplanted, but rather hoed out to the Distance of five or six Inches, and permitted to remain in the same Place, observing to keep them clear from Weeds, and they will flower in *June*, and their Seeds will be ripe in *August*.

MELISSA; Baulm.

The Characters are;

It is a verticillate Plant, with a labiated Flower, consisting of one Leaf, whose Upper-lip is roundish, upright, and divided into two; but the Under-lip is cut into three Parts: Out of the Flower-cup rises the Pointal, which is attended, as it were, with four Embryo's: these afterwards

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wards turn to so many Seeds, which are roundish, and inclos'd in the Flower-cup. To these Notes may be added, the Flowers are produc'd from the Wings of the Leaves, but are not whorled quite round the Stalks.

The Species are;

1. MELISSA; *hortensis*. C. B. P. Garden-Baulm.

2. MELISSA; *hortensis, foliis ex luteo variegatis*. Garden Baulm, with yellow variegated Leaves.

3. MELISSA; *Romana, molliter hirsuta, & graveolens*. H. R. Par. Stinking Roman Baulm, with soft & hairy Leaves.

There are some other Species of this Plant which are preserv'd in curious Gardens for Variety; but as they are never cultivated for Use, so I shall pass them by without naming.

The first of these Sorts is cultivated in Gardens for Medicinal and Culinary Use: This is propagated by parting the Roots, either in Spring or Autumn, planting the Slips at about eight or ten Inches Distance, in Beds about four Feet wide, leaving a Path two Feet between the Beds, for the Convenience of cleaning, watering, and cutting the Plants.

When they are first planted, if the Season proves dry, you must carefully water them until they have taken Root, otherwise they will be subject to decay, but afterwards they will require no farther Care, but only to keep them clear from Weeds. These Plants should be transplanted and parted every other Year, otherwise their Roots will grow so large as to injure each other, and for want of Room will rot and decay.

The variegated Sort makes a very pretty Appearance in the Spring Season, while the Leaves are young,

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but afterwards their Beauty goes off; however, a few Plants of this Sort may be planted in large Borders for Variety.

The third Sort is a Plant of no great Beauty or Use, but is preserv'd in several curious Gardens for Variety. This is somewhat tender, and should have a dry Soil and a warm Situation, otherwise it is sometimes destroy'd in severe Frosts.

The two first Sorts will grow in almost any Soil or Situation; but the strip'd Sort should not have a rank Soil, which would cause it to grow vigorously, whereby the Beauty of its variegated Leaves soon goes off.

MELISSA TURCICA; *vide Moldavica*.

MELO; A Melon.

The Characters are;

The Flower consists of one Leaf, which is of the expanded Bell-shape, cut into several Segments, and exactly like those of the Cucumber: Some of these Flowers are barren, not adhering to the Embryo; others are fruitful, growing upon the Embryo, which is afterwards chang'd into a Fruit, for the most part of an Oval-shape, smooth or wrinkled, and divided into three seminal Apartments, which seem to be cut into two Parts, and contain many oblong Seeds.

The Species are;

1. MELO; *vulgaris*. C. B. P. Common Musk Melon.

2. MELO; *rotundus, parvus*. C. B. P. Small round Musk Melon, commonly call'd, The Portugal or Pocket Melon.

3. MELO; *reticulatus*. J. B. Netted or wrought Melon.

4. MELO; *magnus, cortice virente, semine parvo*. J. B. Greater Musk Melon,

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Melon, with a smooth green Skin, and a small Seed.

5. MELO; *Hispanicus, cortice albo, intus rubente*. White Spanish *Melon*; vulgò.

6. MELO; *cortice levi, intus viride*. The Green flesh'd *Melon*; vulgò.

There are several other Varieties of *Melons* which are annually brought into *England*; but as many of them are only accidental Variations, and seldom continue to produce the same Kinds from Seed again, so it would be to little Purpose to enumerate them in this Place.

As there is not any Plant cultivated in the Kitchen-Garden, which the Gardeners near *London* have a greater Ambition to produce early and in Plenty; so there is a great Number of Methods now practis'd in the raising and dressing of the Vines, in order to obtain them in greater Perfection: But to enumerate them all in this Place, would greatly exceed my intended Bounds, therefore I shall only set down the plain and easy Method, whereby a Person may depend on having a good Crop of *Melons* whenever the Season is tolerably good for them, provided the Seed be good, and the Directions duly follow'd.

And first, as to the Choice of Seed: In this you must be careful, because the whole Success of your Labour and Expence depends upon it. You should annually (if possible) exchange your Seeds, and not continue to save and sow the same for several Years in the same Ground, for they will certainly degenerate in two or three Years, and from being extraordinary good Sorts, will become very bad; therefore you should purchase some good *Melons* from some Gardens at a great Distance

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from you; which Seed (provided the Fruit was well-tasted, high-colour'd, and of a firm Nature) should be carefully preserv'd two or three Years before it be sown, when it will not be so subject to produce strong luxuriant Vines, but will be more productive of Fruit, (for as I have observ'd, that by keeping these Seeds, they annually lose of their Weight; so it is certain, that the watery Parts do first evaporate; and these are what promote Luxuriancy in all Plants, therefore the more of these are lost by keeping, &c. the more fruitful will the Plants be): but it must be observ'd, that although these Seeds will retain their growing Quality for eight or ten Years, yet they are not near so good at that Age (whatever may have been said to the contrary); for the Plants produc'd from such Seeds are generally too weak to produce Fruit of any considerable Size, and Seed of three or four Years old is by the best Judges always preferr'd.

But if you cannot obtain Seeds of that Age, and are oblig'd to sow new ones, then you should either carry it in your Breeches Pocket, where it may be kept warm, or plac'd at a proper Distance from a Fire two Months before it be sown; by which means the watry Parts will be carry'd off, and the Seed prove equally as good as if it had been kept two or three Years, as hath been experienc'd by several curious Persons.

There are commonly great Quantities of *Melon* Seed brought into *England* annually as great Curiosities, which often tempts the Gardeners to sow it, expecting something very extraordinary from it; but it seldom happens that it ever proves good, therefore great Care should

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should be taken to know from whence it comes; by which may be gather'd how proper it is for our Climate, and also some Judgment made of the Goodness of the Sorts: For those *Melons* which are produc'd in the *West-Indies*, are generally very large, and being brought from a very hot Country, seldom come to any thing in *England*; and those Seeds which come from *Spain*, *Italy*, or the *Levant*, are seldom good for much, the Gardeners in those Countries being very careless in saving their Seeds: But the best Country to procure *Melon* Seeds from, is *Languedoc* in the South of *France*, where the Gardeners emulate each other in producing the finest *Melons*, and the Seeds brought from thence are much preferable to any sav'd in *England*, and do succeed better than those brought from most other Countries.

Having thus largely treated of the Choice of Seeds, I shall now proceed to the Method and Times of sowing them; which, according to the common Practice of the Gardeners near *London*, is at two Seasons, *viz.* The first, (which is for the early Crop, to be planted under Frames) in the latter End of *January*, or the Beginning of *February*; tho' indeed there are some who, endeavouring to produce early Fruit, sow their Seeds in *December*, but then there must be a great Expence and Care, otherwise they will come to nothing: So that the most certain Season is that before-mention'd; for if by great Care the Plants which are rais'd sooner are preserv'd in Health, yet when the Fruit first appears, if the Beds are not in good Temper for Heat, and great Care be not taken in giving them a just Proportion of Air, the Fruit will fall off and come to no-

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thing. The second Season for sowing this Seed (which is for Bell or Hand-Glasses) is about the Beginning of *March*, or a little later, according to the Earliness or Lateness of the Season; and is the general Crop of *Melons* which are commonly ripe in *July* or *August*: But I shall first begin with Directions for Raising and Managing the early Crop for Frames.

About seven or eight Days before you intend to sow the Seeds, you must prepare a Parcel of new Horse-Dung from the Stable, which should be cast up (together with the Litter) into a round Heap, mixing therewith a few Sea-Coal Ashes, which will help to preserve the Heat of the Dung. After it has lain in the Heap a Week, it will have acquir'd Heat enough for the Purpose: You must therefore dig a Trench the Length and Width of the Frame you intend for the Bed, and about a Foot deep, (provided the Ground be dry; but if it be wet, the Trench should not be above three or four Inches deep); into this Trench you must lay the Dung, observing to shake and work it well with the Fork, so that every Part of it may be equally stirr'd, whereby it will settle all alike; and it should be beaten down with the Fork, to prevent the Heat from going off too soon: This Dung should be laid three Feet thick; and after having made it exactly level on the Top, you should lay some fine light Earth thereon, about three Inches thick, on which the Seeds should be sown two Days after the Bed is made, covering it about half an Inch with the same light Earth. If after the Seed be sown, the Bed should prove very hot, you must raise the Light with a Stone about an Inch high) which will

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will make Way for the Steam of the Bed to pass off: But if it should prove cool, you must lay some Litter about the Sides, and cover the Glass well with Mats or Straw every Night, and in bad Weather, which will soon bring it to a Heat. In about five Days after the Seed is sown, the Plants will appear above-ground; when you must carefully give them Air, to prevent their being suffocated by the Steam of the Bed, as also turn the Glass every Day, when the Weather is fair, to dry off the Damp which settles upon the Glass; and if the Weather should not admit of the Glass lying the wrong Side upwards to dry, then you must only turn it, and wipe off all the Moisture with a woollen Cloth, and turn the Glass again; for if the Moisture, which is collected upon the Underside of the Glass, be suffer'd to fall upon the Plants, it will occasion their changing yellow, and cause them to be very weak; for this proceeds from the Steam of the Dung and Earth, and the Perspiration of the Plants, which being confin'd and mix'd together, becomes of a rancid Nature, and so proves destructive to whatever Plants it lodges upon, or that imbibes any Part of it.

You should also, so soon as the Plants appear, cast up a fresh Heap of new Dung, as before; and after having lain in the Heap about six Days, you may make a new Bed in the Manner before directed, covering the Dung three Inches thick with good fresh light Earth; then put on the Frame and Glasses, and let it remain two or three Days for the great Heat to pass off before you set the Plants therein, that the Bed may be of a moderate Temper, otherwise the Roots of the Plants

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will burn: When you find your Bed of a proper Temper for Heat, which you may easily know, by thrusting your Finger down in the Earth, letting it remain a small Time, and if you feel no violent Heat, then you may be sure there will be no Danger of injuring them thereby: Therefore you should take up the Plants carefully out of the Seed-bed, (raising them with your Finger, that the Roots may not be injur'd) and prick them into the new Bed, about three Inches Distance each Way, covering the Glasses with Mats, if the Sun should be warm, till they have taken Root, after which you must be very careful to give them Air in Proportion to the Heat of the Bed, otherwise they will draw up very weak, and change yellow: You must also, as the Stems of the Plants advance in Height, put in some dry fresh Earth between them, to earth the Shanks, which will greatly increase their Strength; and be very careful to wipe the Moisture off from the Glasses, as was before directed, for the Reasons already laid down; and proportion your Covering of Mats every Night to the Heat of the Bed.

In about a Fortnight after the Plants are prick'd out, they will begin to shew the third (or what, in the Gardeners Language, is call'd the rough) Leaf; at which time you must be provided with a fresh Parcel of new Dung in Proportion to the Quantity of Holes you intend to plant, allowing a full Load (which commonly contains fourteen good Wheel-barrows) to each Hole: When the Dung has lain in the Heaps six or eight Days, you must dig out a Trench in Proportion to the Length and Breadth of your Frames, and about a Foot deep,

deep, if the Soil be dry, but if wet, four or five Inches will be sufficient: Then wheel the Dung therein, observing to shake and work it equally in every Part of the Bed, that the Heat may be equal; and after having laid it even and level, you should lay on the Earth (observing to break it very fine) about three Inches thick, laying it exactly even; then put on the Frames, and in the Middle of each Light, where the Plants are to be planted, you should put a good Basket full of fresh, light, rich Earth, raising it into a little Hill; then cover the Beds with the Glasses, letting it remain two or three Days, till you perceive it is of a proper Temper for Heat; when you must take the Plants carefully out of the former Bed, and after having levell'd the Hills in the Middle of each Glass on the Top, and made it a little hollow, to contain a small Quantity of Water, you should set two strong Plants into each, observing to give them a little Water if the Earth be dry, as also to shade them from the Sun until they have taken Root; after which you must be careful to give them Air, according to the Proportion of the Heat of the Bed, as also to turn the Glasses to dry them: And when the Plants have put out the fourth Leaf, (which is what the Gardeners term having two Joints) you should pinch off the extreme Part of the Shoot, in order to force out lateral Branches or Runners; which when they have produc'd about six Inches long, should be regularly plac'd in the manner they are design'd to remain; for these Shoots ought never to be displac'd, or the Leaves bruise'd with the Hand, which is very injurious to them; therefore you should constantly keep them clear from Weeds, and as the Shoots are produc'd, lay

them in their true Order so as not to cross or entangle with each other, but by no means should you stop them, as is too often practis'd, which occasions their putting forth a greater Number of Shoots, but then they are the weaker, and so there is a Confusion of Vine, but those not strong enough to produce any considerable Fruit, nor will the first *Melons*, which appear upon such Vines, remain, but, on the contrary, fall away, and come to nothing.

These Plants should be often refresh'd with Water, but you must be careful not to give them too much; and when the Vines have grown off from the little Hill upon which they were planted, you should water them gently all over their Leaves, which will greatly refresh them, but you should be careful not to do this in the Heat of the Day, lest the Sun, by immediately exhausting the Moisture, should scorch the Leaves of the Plants; nor should it be done late in the Evening, for the Glasses being then put down close, and cover'd with Mats or Straw, the Moisture which always arises after such Waterings, where there is a Warmth in the Beds, being pent in, will become rancid, and mixing with the Air, will occasion its being hurtful to the Plants, therefore the best Time is about seven or eight of the Clock in the Morning, according to the Season of the Year; and when you find the Sun shines hot upon the Glasses, you should raise them, to let the Steam pass off, and in the Middle of the Day, in very hot Weather, the Glasses should be shaded with Mats or Straw, which will prevent their scorching, and preserve a gentle Moisture in the Bed, which is absolutely

lately necessary for the Growth of Plants.

When your Fruit begins to appear, you will at the same Time perceive a great Number of Male Flowers (which the Gardeners call false Blossoms, and are easily distinguish'd from the fruitful ones, by their being produc'd upon a slender Pedicle, whereas the fruitful ones are always fasten'd to the Top of the young Fruit): These are by many Persons carefully pick'd off, as supposing that they weaken the Plants, and are injurious to the young Fruit; but this is a very great Mistake, (as I have more than once experienc'd) for they are absolutely necessary to impregnate the Ovary of the fruitful Flower: Which when done, the Fruit will soon swell and grow large; but if this be obstructed, they seldom come to any thing, but on the contrary, change yellow, and fall off: Therefore I would caution every one against the nice pruning of *Melons*, in which they are so liable to commit Mistakes; whereas on the contrary, when they never do any thing more but only stop the first leading Shoots, to encourage their producing strong Runners, there is no Danger of miscarrying, if the Vines are but kept clear from Weeds, and not tumbled or bruised, but carefully attended with Water, &c. then the natural Growth of the Plants not being obstructed, you need not fear Success.

During the Growth of the *Melons* you should constantly attend them with Water, being cautious not to give them too much; but when the Fruit is arriv'd to a considerable Bigness, you should intirely forbear watering them, or at least do it very sparingly, for the Water which is then given them, does but con-

tribute to the making them large and ill-tasted, which should always be avoided, for a middle-siz'd well-tasted Fruit is far preferable to the most monstrous, watery, green, ill-tasted *Melon* that was ever produced.

When the Fruit begins to ripen, (which you may know by the changing its Colour, and emitting an Odour when closely smell'd to) you should turn it every Day, that every Side of the *Melon* may be expos'd to the Sun, that it may be equally ripen'd on all Sides: And if you intend to eat it soon after it is gather'd, you should let it remain upon the Vines until it changes pretty yellow, and the Stalks seem to separate from the Fruit; then you should cut it off in the Morning before the Sun is too hot, observing to preserve two Inches of the Stalk to the Fruit, otherwise it will lose of its Richness: But when the Fruit is to be sent to any Distance, so that it will be two or three Days before it is eaten, then you must observe not to let it be too ripe before it be cut, for it will be little worth, after being kept two or three Days.

If the above-mention'd Directions be duly observ'd, you will not have Occasion to pull off the Leaves from the Vines, to admit the Sun to the Fruit, as is often practis'd, though very absurdly, for the Fruit will always thrive much better where it has a gentle Coverture of Leaves, than where it is too much expos'd to the Sun, which hardens the outer Skin, and prevents its kindly Growth whereby it is render'd tough and ill-tasted.

But notwithstanding I have advis'd the planting out the *Melon* Plants upon the Hills in the Middle of each Glass, yet if any Person is
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very curious to have early Fruit, the best Method is to plant them in Baskets, (in the Manner as was directed for *Cucumbers*, under which Head you will find proper Instructions how they are to be manag'd until they are ridg'd out into the Frames for good, which should not be done till the Flowers begin to appear); after which the Management must be the same as hath been before inserted, both as to Pruning, Watering, &c. therefore I shall forbear repeating either of those Articles in this Place, but shall now proceed to the Method practis'd by the most skilful Gardeners, for the second or general Crop of *Melons* which are rais'd commonly under Bell or Hand-Glasses.

The Season for sowing the Seed for this Crop, is (as I before mention'd) about the Beginning of *March*, and may be put into the Upper-side of the Hot-beds where your early *Melons* or *Cucumbers* are planted, in which Place they will soon come up, and may then be taken up and transplanted into a new Hot-bed, and cover'd either with Hand-glasses or Frames, (according as you have Conveniency) observing to refresh 'em with Water, as also to shade them, until they have taken Root; after which, you must let 'em have a great Share of fresh Air when the Weather is good, that the Plants may grow short and strong; and observe to earth up their Stems, as they advance, with light Earth, which will greatly encourage the Plants.

About the Beginning of *April* the Plants will put out their rough Leaves, at which Time you should be provided with a Quantity of new Dung, in Proportion to the Number of Holes intended, (always

allowing a good Load of Dung to five Holes, which is the common *Quantum*) which should be cast into a Heap for six or seven Days, mixing therewith a few Sea-coal Ashes; and when the Dung is in a proper Temper for using, you must dig out a Trench, the Length whereof should be according to the Number of Glasses you intend in each Row, allowing them three Feet Distance, and in Width two Feet and an Half: But the Depth must be proportion'd to the Moisture or Dryness of the Soil; in a dry one it should be ten Inches deep, but in a moist Soil two or three Inches will be enough; then you must wheel the Dung therein, observing to shake and work every Part of it equally, and to lay it of an equal Thickness, as also to make the Sides strait: Then having laid the Dung even, you must mark out the Places intended for the Holes, at each of which you must lay a Basket full of fresh light rich Earth, thrusting a Stick about two Feet long into the Middle, which must remain for a Mark where the Hole is to be made; then cover the Dung all over, both Top and Sides, with the Earth that came out of the Trench, laying it exactly smooth and even, about three Inches thick, or somewhat more: Then put the Glasses on over each Stick, letting 'em remain close down two Days, by which Time the Dung will have warm'd the Earth sufficiently to receive the Plants: You should therefore draw out the Sticks, and with your Hand-level the Top of the Hill, breaking the Clods, and laying it hollow like a Dish, to retain the Water given to them; then take the Plants up carefully from the other Bed, and put two strong ones into each Hole, observing to water

water and shade 'em until they have taken Root.

Thus having made one Ridge, you may continue to make as many more as you have Glasses for, allowing six Feet between each Ridge for a Path to go between them; which, at the first making the Ridges, may seem a great deal, yet after the Vines have run, and the Sides of the Ridges made up to support 'em, there will not be above two Feet left for a Path, which is as little as can well be allow'd.

Your Plants having made new Roots, and put out a fourth Leaf, you should nip off the Top of each, to force out Runners from the Bottom (as was before directed for those in Frames;) and as the Weather increases warm, so you should always raise up the Glasses on the South-side with Stones, in the Middle of the Day, to give 'em Air, which will cause 'em to be very strong; and also give them a little Water twice a Week, if the Weather be good; but don't give 'em too much at each Time, lest you thereby canker and rot their Roots.

About the Middle of *May*, or sooner (according as your Plants have thriven) their Runners will have grown so as to crush against the Glasses on every Side; therefore you should place three Bricks under each Glass at Right Angles, upon which the Glasses should be set, so that there may be a Hollow under each of about two Inches, or less, which will be sufficient to admit the Runners out; then you should gently lead them from under the Glasses, putting each in its right Position, so that they may not cross or intangle with each other; to prevent which,

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you should have some small forked Sticks (such as are commonly used in laying *Carnations*) with which you should gently peg down each strong Runner, which will prevent their being displac'd by the Wind, or any other Accident. But you must observe, if the Nights prove cold after they are let out from under the Glasses, to cover 'em with Mats; otherwise the Ends of the Shoots will suffer by the Cold, to the no small Injury of the Plants: You must also observe to refresh 'em with Water (as before;) but forbear all other pruning or handling them, for the Reasons before laid down.

When the Vines have extended themselves to the Sides of the Ridges, you should dig up the Ground on each Side about two Feet wide, laying therein some old rotten Horse-dung, covering it with the Earth, so as to raise it even with the Top of the Ridges, whereby they will be widened near four Feet; and so the Vines will have Room to run on each Side, without hanging down from the Ridges; and the old Dung which was laid on each Side will be of great Service to the Roots. After having made up the Ridges in this manner, you must gently lay out the Shoots thereon, being careful to train 'em in their proper Order, so as not to cross each other: You must also carefully clear 'em from Weeds; but be very careful that you do not bruise or break the Leaves with your Hands; and then set the Glasses on again over the Roots, where they may remain unremov'd during the Continuance of the Plants: For after this, all the Water which is given to 'em must be gently sprinkled all over the Plants; and it's no matter

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matter whether any of it falls close to the Stems: But, on the contrary, the drier they are preserv'd, the greater Vigour they will have; for the Roots, which are the chief Support of 'em, are at this Time at a much greater Distance from the Hole, and will receive the Benefit of the Water much better, when given all over the Top of the Ridges.

When your *Melons* begin to appear upon the Vines, if the Season should be very hot and dry, you should pour down the Water in the Paths between the Ridges, which will soak in and supply the Roots with Moisture; and at that Season, the Water which is given all over the Plants should be but little, and given to them very gently, lest by the Violence of the Water you injure the tender Fruit: But after they are grown as large as your Thumb, they will be almost out of Danger, tho' then it will be adviseable to give them but gentle Refreshings over the Vines; but this may be repeated two or three times a Week, according to the Heat of the Season, observing always to do it in the Evening, that it may have Time to soak in before the Sun comes on to exhale the Moisture. As to the pruning of them, I would (as I before said) advise never to be busy in that, since the more exact you are in that, the more likely you are to do hurt, therefore you need do no more than only keep the Vines clear from Weeds, and train them in regular Order.

When the Fruit is about the Bigness of a Tennis-Ball, you should place a thin Piece of Tile under each, to raise them from the Ground, otherwise they are very apt to rot (especially if the Season

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should prove moist) or at least to receive Damage on the Underside; and when the *Melons* are full grown, you should forbear watering them; and if the Weather be cold, you should place Glasses over them, which will greatly accelerate their Ripening, and cause 'em to be better tasted: You should also turn the Fruit two or three times as it is ripening, that every Part may be equally ripened; and in cutting them, you should observe the Directions before laid down.

In saving the Seeds, you should be careful to take them from such Fruit as are well ripened, of a firm Flesh, and well-tasted, suffering it to lie in the Pulp spread upon a Paper four or five Days before it be wash'd out; then you must dry it, and put it up for Use, always observing to title each Sort, and add the Year it was saved.

The best Sorts for Frames, are the *Black Galloway*, and the *small Portugal Melons*, which ripen early, and do not produce so strong Vines as the larger Sorts, which require more Room than can be allow'd them in Frames.

Of late Years, there has been a Method of raising the general Crop of *Melons* under oiled Paper, instead of Bell or Hand-Glasses, which has succeeded so well, as to be now very commonly practis'd in the Gardens near *London*; but this Method being at present unknown to Persons who reside in the Country, I shall insert it in this Place. The Manner of raising the Plants, as also of making the Ridges, being the same as for Hand-Glasses, I shall not repeat either, but proceed to give Directions for preparing the Papers. You must provide your self with a Quantity of strong

strong Cap Paper, nine Sheets of which must be allowed to each Hole of *Melons*. These nine Sheets of Paper must be join'd together with Paste (which, when done, will spread the Width of a common Mat, which is used for Covering.) When the Paste is dry, the Paper should be spread on a Board, or hung against a Wall, and with a Brush should be rubb'd over with Oil, which need be done but on one Side, for the Oil will sink thro' the Paper, if it be only lightly brush'd over; then the Papers should hang out till they are dry, after which they may be used for covering your *Melon* Plants. These Papers should be prepared before you plant out your Plants into the Holes, that they may be ready to cover them, which may be performed in the following Manner; (*viz.*) After the Ridges are made, you must procure some small Hoops, or slender Withys, which should be thrust into the Ground on each Side of the Ridge, and arched over in the same manner as is practis'd for covering Flower Beds, then the Papers may be laid over the Hoops, &c. and fasten'd down at each End with a Cord, or a few large Stones or Bricks laid upon their Ends, to prevent the Winds from blowing them off. These Papers should be kept close over the Plants while they are young, or in bad Weather; but when the Plants have obtain'd Strength, and the Weather is favourable, they should be rais'd on one Side to admit Air to the Plants; and in soft Rains, they should be taken quite off, that the Plants may enjoy the Benefits thereof. These Papers may continue over the Plants, throughout the Season, observing only to take 'em

off in soft Rains, and admit Air under 'em in warm Weather, to the Plants, as was directed; the Plants will thrive much better under these, than under Glasses; for the Rays of Light will be more equally admitted thro' the Paper when oiled, than thro' a Glass, which collects the Rays, and thereby occasions too great a Heat in Summer under them, than most Plants can endure. So that Plants under Glasses, are subject to Danger, from the great Inequality of Heat; whereas those under Papers, enjoy a more equal Degree, and hereby the Plants are continued much longer in Vigour, as I have always observed those under Papers in great Health, when those under Glasses have been decayed, tho' they were in the same Situation, and under the same Management.

Tho' I have directed the making of the Ridges after the same manner as for Hand-Glasses, yet there are some Persons, who only dig Holes in the Ground at proper Distances, into each of which they put two Barrows full of Hot-dung, covered over with the Earth taken out of the Holes, into which they plant their *Melon* Plants; then arch over each Hole with a few slender Wands, covering 'em with the Papers, and managing them as hath been directed, in which Method I have observed they have had a prodigious Crop of *Melons*, with a much less Expence than usual.

N. B. These oiled Papers will last one whole Season very well, so that the Expence of Paper and Oil, will amount to Three-pence Half-penny for each Hole.

MELOCACTUS; Melon-Thistle.

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The Characters are;

The whole Plant hath a singular Appearance, is very succulent, and hath many Angles, which are beset with sharp Thorns; the Flower consists of one Leaf, is tubulose and Bell-shap'd, divided into several Parts at the Top, and hath many Stamina or Threads; the Ovary becomes a soft fleshy Fruit, containing many small Seeds.

The Species are;

1. MELOCACTUS; *India Occidentalis*. C. B. P. The common or large Melon-Thistle, commonly call'd Turk-Cap or Pope's-Head in the *West-Indies*.

2. MELOCACTUS; *Americana, minor*. Boerb. Ind. The lesser Melon-Thistle, or small Turks-Head.

There are several other Sorts of this Plant in the *West-Indies*, but the two here mention'd are all the Sorts which I have yet seen in the *European* Gardens.

These Plants are Natives of the Rocks in the *West-Indies*, where they are thrust out from the Apertures thereof, and can receive but little Nourishment from the Soil; nor will they thrive when transplanted into another Situation, tho' it be in the same Degree of Heat, unless the Place be rais'd above the Level of the Ground with Stones and Rubbish.

The great Sort (which is very plenty in *Jamaica* and the other Islands in the *West-Indies*) is brought into *England* very often, but it rarely happens that they arrive here in perfect Health; for the People who bring them over, suppose they can't live without Moisture, which they seldom fail to supply all the Plants they bring over with, whereby they are rotted and destroy'd; and although these Plants do not presently shew the

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Damage they have sustain'd in their Passage, yet they seldom continue long before they perish: Therefore the best Method to bring them over, is to take them up intire from their Places of Growth, and pack them up in a large Box, with dry Hay or Straw, so that they may not wound each other in their Passage, observing to place them where neither Moisture nor Vermin can come to them, in which Way they will arrive in perfect Health; but the Persons who get them, should never chuse the oldest Plants, but rather such as are young and thriving, which are the most likely to continue any time with us.

But if they are brought over planted in Tubs, then the best Method is to fill the Tubs with Rubbish, and set the Plants therein, observing never to give them any Water during their Passage, nor suffer them to receive Wet, which will certainly damage them: And when they arrive in *England*, they should immediately be taken out of the Tubs, and planted into Pots fill'd with Lime-Rubbish and Sea-Sand intermix'd, and the Pots plung'd into a Hot-bed of Tanners Bark, to facilitate their taking Root: In which Bed they should remain until the Beginning of *October*, when they must be remov'd into the Stove, observing to place them in the warmest Situation, and be very careful not to let them have the least Moisture during the Winter-season, which will infallibly rot them. In the *Spring* of the Year, they may be remov'd out of the Stove into the Bark-bed again, at the same Season when the *Anana's* are taken out, and should be plac'd in such a Frame where they will only require

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quire a little Air in very hot Weather, but should be water'd very sparingly, for the Moisture which arises from the Tanners Bark will be almost sufficient for them.

This Plant is not very easy to increase in this Country, though I have seen some young ones that were produc'd from Seeds which ripen'd in *England*: These Seeds were sown upon a Pot of Lime-rubbish, and but gently cover'd with the same Mixture of Lime-rubbish and Sand (as was before order'd for these Plants) and the Pots plung'd into a Hot-bed of Tanners Bark, where the young ones began to appear in about ten Weeks after sowing, and by careful Management were preserv'd: But these Plants being of very slow Growth, do not arrive to any Magnitude in less than four or five Years, which renders this Method very tedious, and as it is not a very sure one, so 'tis seldom practis'd in *England*. I have also made Use of another Method, which has succeeded very well; *i. e.* when the Cap or Crown, which is produc'd on the Top of the Plant, has been injur'd, it occasions the Plant to send out many Side-heads, several of which I have taken off, and planted in Pots fill'd with Lime-rubbish and Sea-sand, plunging the Pots into a Hot-bed, and they have taken Root very well, and in one Year's time have made very handsome Plants, but these Heads should not be planted immediately after they are taken from the old ones, for the wounded Part will be apt to rot, therefore you should lay them by in a warm Part of the Stove for about a Fortnight; in which time the wounded Part will heal over, and they may then be

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planted without Danger: But you must observe to keep them very dry, otherwise they will rot in a short time.

The smaller Sort is not so common in *England*, which is occasion'd by its being very rare in our *American* Settlements, this being originally brought from the *Spanish West-Indies*, where is a great Number of other very strange Sorts.

This is only propagated by Seed, which is produc'd in great Plenty every Year from old Plants. The Fruit of this Kind is not thrust out from the Top of the Plant, as in the larger Sort, but is produc'd from the Hollows between the Protuberances of the Plant, and is preceded by a white cottony Substance, which surrounds the Flowers. These Fruit are nearly as large, and of the same Shape and Colour with those of the large Sort, and are as full of Seeds.

These Seeds must be sown in the same manner as the former, and the Plants preserv'd both *Winter* and *Summer* in the same Situation, and should have but little Moisture in very hot Weather; in *Winter* they must have Water given them very sparingly; for at that Season they are very apt to rot, if they receive much Moisture.

These Plants are preserv'd with great Care by such as are curious in Exoticks, they being of the most uncommon and wonderful Structure, greatly differing from any thing in the vegetable Kingdom, of *European* Growth, inso-much that many Persons, at the first Sight of these Plants, have suppos'd them not natural Productions, but rather some artful Con-

trivance to amuse People, until they have more maturely consider'd their Parts.

The Fruit of both Sorts are eaten in the *West-Indies*: They have a very grateful Acidity in their Taste, which is extremely agreeable to the Inhabitants of those warm Countries: But I don't know any farther Use of the Plants.

MELOCARDUUS; *vide* Melocactus.

MELON; *vide* Melo.

MELONGENA; Mad-Apple.

The Characters are;

The Flower consists of one Leaf, shap'd like a Wheel, and cut into many Segments: From the Flower-Cup arises the Ovary, which becomes a fleshy Fruit, full of Kidney-shap'd Seeds.

The Species are;

1. MELONGENA; *fructu oblongo, violaceo. Tourn.* Mad-Apple, with an oblong Violet-colour'd Fruit.

2. MELONGENA; *fructu oblongo, albo. Tourn.* Mad-Apple, with an oblong white Fruit.

3. MELONGENA; *spinosa fructu rotundo, croceo. Tourn.* Prickly Mad-Apple, with a round Saffron-colour'd Fruit.

4. MELONGENA; *fructu rotundo, cum spinis violaceis. Tourn.* Mad-Apple, with a round Fruit and Violet-colour'd Prickles.

There are several other Varieties of this Plant, which differ in the Size, Form or Colour of the Fruit, or in the Shape of their Leaves; but those here mention'd, are all that I have observ'd in the *English* Gardens.

These Plants are greatly cultivated in the Gardens of *Italy*, *Spain* and *Barbary*, in which Places the Inhabitants eat the Fruit of them boil'd with fat Flesh, putting there-

to some scrap'd Cheese, which they preserve in Vinegar, Honey or Salt-Pickle all Winter, to provoke a Venereal Appetite: But in Summer, when the Fruit is just ripe, they usually gather them, and make them up into Puddings with several Sorts of Spices, and other Ingredients: Which Dish the *Italians* are very fond of.

They are propagated by Seeds, which must be sown upon a moderate Hot-bed in *March*; and when the Plants come up, they must be transplanted into another Hot-bed about four Inches asunder, observing to water and shade them until they have taken Root: after which you must give them a great Share of Air when the Weather is warm, otherwise they will draw up very weak: They must also be frequently water'd, without which they will make but a very indifferent Progress: But when they are grown so strong as to fill the Frame (which will be by the middle of *May*) you must transplant them out into a rich Spot of Ground at two Feet Distance, observing to preserve as much Earth to the Roots as possible when you take them up, otherwise they are subject to miscarry. You must observe to water them plentifully until they have taken Root, after which they will require but very little Care more than to keep them clear from Weeds, and in very dry Weather to give them some Water.

About the Middle of *June*, the Fruit will appear; at which time, if the Weather be very dry, you must often water them, which will cause the Fruit to grow very large, and increase their Number: Toward the latter End of *July* their

their Fruit will ripen, when you must preserve the Seeds of each Kind separate.

These Plants are only preserv'd as Curiosities in the *English* Gardens, the Fruit being never us'd in this Country, except by some *Italians* or *Spaniards*, who have been accusom'd to eat of them in their own Countries.

MELOPEPO; The Squash.

The Characters are;

It hath the whole Appearance of a Pumpkin or Gourd; from which this differs in its Fruit, which is roundish, fleshy, streaked, angular, and for the most Part divided into five Partitions, inclosing flat Seeds adhering to a spongy Placenta.

The Species are;

1. MELOPEPO; *compressus*. C. B. P. The common or flat Squash.

2. MELOPEPO; *fructu maximo, albo*. Tourn. The large white Squash, commonly call'd The white flat Pumpkin.

3. MELOPEPO; *fructu Citriformi*. Tourn. The Citron-shap'd Squash.

4. MELOPEPO; *verrucosus*. Tourn. The warted Squash.

5. MELOPEPO; *verrucosus, fructu & semine albis*. Tourn. Warted Squash, with white Fruit and Seed.

6. MELOPEPO; *flavesceus, folio aspero*. Tourn. Yellowish Squash, with a rough Leaf.

There are several other Varieties of this Plant in the *West-Indies*, where they greatly abound, most of which are seminal Variations, and seldom continue long to produce the same Kinds from Seeds, at least with us they never do continue three Years together the same, but do vary most extraordinarily; for the Seeds sav'd from such Plants which grew upright,

and did not produce Runners (as the more ordinary Sorts) the succeeding Year, were as luxuriant as any of other Kinds, and the Fruit was of a different Shape from those which the Seeds were taken from.

These are all propagated by sowing their Seeds in *March* upon a moderate Hot-bed; and when the Plants come up, they should have a great Share of Air, otherwise they will draw up so weak, as to be good for little: You must also gently refresh them with Water, as you shall find they require it. In *April* they must be transplanted out where they are designed to remain (which in *England* is most commonly upon old Dung-hills, over which the Vines will spread, and produce a great Quantity of Fruit:) If you plant them in an open Spot of Ground, you should dig Holes at about fourteen Feet square, into each of which you should lay a Barrow full of hot Dung, making a Hollow in the Middle to receive the Plants, which must be fill'd with good rich Earth; then cover the Dung all over, Top and Sides, with the Earth that came out of the Hole, placing a Glass over the Middle; in which manner it should remain until the Earth in the Holes begins to warm (which is commonly in twenty-four Hours after making) when you must take them up out of the Seed-bed, and plant two of 'em into each Hole, observing to water and shade them until they have taken Root: after which you must let them have much free Air; and when they begin to send forth their Shoots, you must take off the Glasses and permit them to run, observing only to clear them from Weeds, and in very dry

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Weather to refresh them now and then with a little Water.

In *July* these Plants will produce a great Quantity of Fruit, which some People are very fond of: These they gather while young, and boil them with Meat instead of Turnips: But notwithstanding what some Persons have advanc'd concerning the Goodness of this Fruit, yet, from several Trials which I have made, I could not bring my Palate to relish them, for they have a very great Flatulency in their Taste, which is agreeable to very few Persons: But in the *West-Indies*, where there is a Scarcity of Garden Roots and Plants, these and many other Sorts are esteemed Delicacies.

MELONRY, or MELONGROUND, is an Apartment in the Kitchen-Garden for the Propagation of *Melons*.

This Spot of Ground should be open to the *South-East* Sun, but shelter'd from the *West*, *North-West* and *North-East* Winds, by Walls, Pales or Hedges; it should also be upon a dry Soil, for nothing is more injurious to these Plants than much Wet: and as in the Spring it often proves very rainy Weather; if the Soil should happen to be too moist, there will be no making the Ridges until it is very late. You should also contrive to place it as near to the Dung as possible, which will save a great deal of Labour in wheeling the Dung; and, if possible, you should contrive to have a Pond of Water near it, which in very dry Weather, will be very useful to water the *Melons*.

As to the Size of the Ground, that must be proportion'd to the Quantity of Ridges intended, which you may easily calculate by allowing eight Feet and a half for eve-

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ry Ridge, and the Holes plac'd at about three Feet asunder; but it is the best Way to allow Room enough where you are not straiten'd for it.

This Ground should be inclos'd with a Reed-Fence, and kept constantly lock'd up during the Time that the *Melons* are growing, for if they are expos'd to every Person that walks in the Garden (most of whom have a Curiosity to handle the Vines, and look after the Fruit) it will be of ill Consequence, nothing being more injurious to these Plants than frequent tumbling or disturbing their Leaves.

The common Practice in most Gentlemens Gardens, is, to inclose a Spot of Ground either with Walls or Pales, which they constantly appropriate to this Purpose: But this is by no means a good Method; for it rarely happens that these succeed well longer than two Years in the same Place, unless the Soil be removed, and fresh brought in, which is very expensive; therefore the best Way is, to have a sufficient Parcel of Reeds made into Pannels, which may be annually moved from Place to Place, so that you need not continue your Ridges longer than one Year in the same Place. And if you have a Piece of Ground which is large enough to divide into four such Places, the Fence may be every Year remov'd forward, till the Whole has been occupy'd; after which you may return to the Spot where you began, which, by that Time, will be as good as fresh Earth: And hereby, without much Trouble, you may remove them every Year; for as one of the Sides will remain unremov'd every Time the Fence is carried forward, so the Labour will not be

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be so great as if it were wholly remov'd to some Distance; and these Reed-Fences are much preferable to either Walls or Pales for this Purpose.

MENTHA; Mint.

The Characters are;

It is a verticillate Plant, with a labiated Flower consisting of one Leaf, whose Upper-lip is arch'd, and the Under-lip is divided into three Parts; but both of them are so cut, that the Flower seems to be divided into four Parts, the two Lips scarcely appearing; these Flowers are collected into thick Whorles in some Species, but in others they grow in a Spike; each Flower having four Seeds succeeding it, which are inclos'd in the Flower-cup: To which may be added, It hath a creeping Root, and the whole Plant has a strong aromatick or balsamick Scent.

The Species are;

1. MENTHA; *angustifolia, spicata*. C. B. P. Common Spik'd-Mint, usually call'd Spear-Mint.
2. MENTHA; *spicis brevioribus & habitioribus, foliis Mentha fusca, sapore fervido piperis*. Raii. Syn. Pepper-Mint.
3. MENTHA; *sylvestris, folio longiore*. C. B. P. Long-leav'd Horse-Mint, or *Mentastrum*.
4. MENTHA; *arvensis, verticillata, hirsuta*. F. B. Water-Mint with whorled Coronets, commonly call'd Water-Calamint.
5. MENTHA; *aquatica, seu Sisymbrium*. F. B. Water-Mint.
6. MENTHA; *Sisymbrium diſta hirsuta, glomerulis ac foliis minoribus ac rotundioribus*. Raii. Syn. Orange-Mint.
7. MENTHA; *spicata, folio variegato*. C. B. P. Spear-Mint, with a variegated Leaf.

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8. MENTHA; *rotundifolia, palmistris seu aquatica major, folio variegato*. Tourn. The Great Round-leav'd Water-Mint, with a variegated Leaf.

9. MENTHA; *angustifolia, spicata, glabra, folio rugosiore, odore graviore*. Raii. Syn. Spear-Mint, with a rugged Leaf, and strong Scent.

10. MENTHA; *Chalepense, angustifolium, raro florens*. Boerh. Ind. Narrow-leav'd Aleppo Mint, which rarely flowers.

There are several other Sorts of Mint, which are preserv'd in some curious Botanick Gardens, many of which are Natives of England; but as they are not cultivated for Use, so I shall omit them in this Place, those above-mention'd being the Sorts which are commonly propagated for Kitchen or Medicinal Uses.

The first Sort is the most commonly cultivated in the English Gardens, both for the Use of the Kitchen and Medicine; but the second Sort is by some greatly esteem'd for its Heat, to make a simple Water: This, at present, is not very common in the Gardens, but has been found growing wild in several Parts of England. The third Sort is also us'd in Medicine, but is rarely cultivated in Gardens, being found in great Plenty in several Places near London. The fourth and fifth Sorts are very common by the Sides of Ponds, and on moist Soils, in divers Parts of England, and are rarely cultivated in Gardens: These are both us'd in Medicine, but the Markets are supply'd with them from the Fields. The seventh and eighth Sorts are preserv'd in Gardens, for the Beauty of their variegated Leaves: As are the ninth and tenth Sorts,

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Sorts, for their Oddness; the one having curl'd Leaves, and the other being very white, but seldom produces Flowers in *England*.

All the Sorts of *Mint* are easily propagated by parting the Roots in the Spring, or by planting Cuttings during any of the Summer Months; but should have a moist Soil: And after planting, if the Season should prove dry, they must be often water'd, until they have taken Root; after which, they will require no farther Care but only to keep them clear from Weeds: They should be planted in Beds about four Feet wide, allowing a Path two Feet wide, to go between the Beds to water, weed, and cut the Plants. The Distance they should be set is about four or five Inches, or more, because they spread very much at their Roots; for which Reason the Beds should not stand longer than three Years before you plant fresh; for by that Time the Roots will be matted so closely, as to rot and decay each other, if permitted to stand longer. There are some People who are very fond of *Mint-Sallet* in Winter and Spring; in order to obtain which, they take up the Roots before *Christmas*, and plant them upon a moderate Hot-bed pretty close, covering them with fine Earth about an Inch thick, and cover the Bed either with Mats, or Frames of Glass; in these Beds the *Mint* will come up in a Month's Time, and be soon fit to cut for that Purpose.

When the Herb is cut for Medicinal Use, it should be done in a very dry Season, just when it is in Flower; for if it stand longer, it will not be near so handsome, nor so well-tasted; and if it be cut when it is wet, it will change black, and be little worth: This

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should be hung up to dry in a shady Place, where it may remain until it be used.

If the Soil be good in which these Plants are to be set, they will afford three Crops every Spring: But after *July* they seldom prove good; therefore what Shoots are produc'd after that Time, should be permitted to remain till *Michaelmas*, when you must cut them down close; and after having clear'd the Beds from Weeds, you should spread a little fine rich Earth all over them, which will greatly encourage the Roots against the succeeding Spring.

MENTHA CATARIA; *vide* Cataria.

MENYANTHES, is *Trifolium Palustre*, or Bog-bean.

This Plant is common upon boggy Places in divers Parts of *England*; but is never cultivated in Gardens, for which Reason I shall not trouble the Reader with any farther Account of it.

MERCURIALIS. Mercury.

The Characters are;

The Leaves are crenated, and grow by Pairs opposite: The Cup of the Flower consists of one Leaf, which expands, and is cut into three Segments; these are Male and Female in different Plants: The Flowers of the Male grow in long Spikes, and consist of many Stamina and Apices, which are loaded with Farina: The Ovary of the Female Plant becomes a testiculated Fruit, having a single round Seed in each Cell.

The Species are;

1. **MERCURIALIS**; *testiculata*, *sive* *mas Dioscoridis & Plinii*. C. B. P. The Testiculated Mercury, vulgarly call'd, The Male French Mercury.

2. **MERCURIALIS**; *spicata*, *sive* *femina Dioscoridis & Plinii*. C. B. P. The Spiked French Mercury.

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3. MERCURIALIS; *montana, testiculata*. C. B. P. Testiculated Mountain Mercury, commonly call'd, Dogs Mercury.

4. MERCURIALIS; *montana, spicata*. C. B. P. Spiked Mountain, or Dogs Mercury.

5. MERCURIALIS; *fruticosa, incana, mas.* Boerb. Ind. Hoary Shrubby Male Mercury.

6. MERCURIALIS; *fruticosa, incana, testiculata*. Tourn. Shrubby Hoary Testiculated Mercury.

The two first Sorts are annual Plants, which grow wild in divers Parts of England, and are rarely propagated in Gardens: The Seeds thereof being sown, produce the two Sorts promiscuously, and are both gather'd indifferently for Medicinal Use. These Seeds should be sown as soon as they are ripe by those who would cultivate it: They will grow upon any Soil or Situation.

The third and fourth Sorts grow wild in shady Lanes in divers Parts of England, where they spread greatly at the Roots: These are never us'd in Medicine.

The fifth and sixth Sorts are not Natives of this Country, but are preserv'd in curious Botanick Gardens for Variety: These may be propagated by sowing the Seeds soon after they are ripe, in a Bed of fresh Earth, where, if the Seeds are good, the Plants will come up the succeeding Spring, and endure the Cold of our ordinary Winters very well: But if the Plants from which the Seeds are taken, have not had some of the Male Plants growing amongst them, the Seeds will not grow, as I have several Times experienc'd.

MESPILUS. The Medlar.

The Characters are;

The Leaves are either whole, and

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shap'd like those of the Laurel, as in the manur'd Sorts, or laciniated, as in the wild Sorts: The Flower consists of five Leaves, which expand in Form of a Rose: The Fruit is umbilicated, and are not eatable till they decay, and have, for the most part, five hard Seeds in each.

The Species are;

1. MESPILUS; *Germanica, folio laurino, non serrato, sive Mespilus Sylvestris*. C. B. P. The common Medlar, commonly call'd, The Nottingham Medlar.

2. MESPILUS; *folio laurino, major*. C. B. P. The Large Dutch Medlar.

3. MESPILUS; *Apii folio, sylvestris, spinosa, sive Oxyacantha*. C. B. P. The common Hawthorn.

4. MESPILUS; *spinosa, sive Oxyacantha, flore pleno*. Tourn. The Double-flowering Hawthorn.

5. MESPILUS; *Apii folio laciniato*. C. B. P. The Azarola, or Neapolitan Medlar.

6. MESPILUS; *spinosa, Pyri folio*. H. L. The Pyracantha or Evergreen Thorn.

7. MESPILUS; *seu spina acuta, biflora, Britannica*. Park. Theat. The Glastenbury Thorn.

8. MESPILUS; *spinosa, sive Oxyacantha, Virginiana*. H. L. The Cockspur, or Virginian Hawthorn.

9. MESPILUS; *aculeata, pyrifolia, denticulata splendens, fructu insigni rutilo, Virginienfis*. Pluk. Phyt. The Virginian Medlar, with shining Leaves, and very red Fruit, commonly call'd, The Virginian Azarol with red Fruit.

10. MESPILUS; *Virginiana, Apii folio, vulgari similis major, grandioribus spinis*. Pluk. Phyt. Virginian Hawthorn with long strong Thorns.

11. MESPILUS; *Prunifolia, Virginiana, non spinosa, fructu nigricante*.

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cante. Pluk. Phyt. Virginian Hawthorn, with a Plumb-leaf and black Fruit.

12. MESPILUS ; *folio subrotundo, fructu rubro.* Tourn. The Dwarf Medlar with red Fruit.

13. MESPILUS ; *folio rotundiore, fructu nigro, subdulci.* Tourn. Dwarf Medlar with black Fruit.

14. MESPILUS ; *Apii folio, sylvestris, spinosa, sive Oxyacantha, fructu albo.* Cat. Plant. Hort. The common Hawthorn, with white Fruit.

15. MESPILUS ; *Americana, non spinosa, fructu luteo.* The American Haw, with yellow Fruit.

The first of these Medlars was formerly more common in the Gardens and Nurseries than at present, for since the Dutch Medlar has been introduc'd, it hath obtain'd the Preference, the Fruit of this being much larger and better flavour'd than the old one, which hath occasion'd their being cultivated in greater Plenty.

Both these Sorts may be propagated by budding or grafting 'em upon the Hawthorn, or the Pear-stock, upon either of which they will take very well; and may be afterwards transplanted into the Fruit-Garden, either in Standards or train'd against an Espalier, in both which Methods they will succeed very well; but if the larger Sort be train'd on an Espalier, the Fruit will be much larger: But you must be careful in pruning, not to shorten their bearing Branches, for the Fruit being, for the most part, produc'd at the Extremity thereof; if they are shorten'd, it will be cut away.

These Plants will grow upon almost any Soil, but the Fruit will be much larger upon a strong Soil, rather moist than dry; though upon

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a middling Soil they are generally best flavour'd.

These Fruits are permitted to remain upon the Trees until October, when they will begin to fall; at which Time they must be gather'd, when dry, and laid by in a dry Place, until they become soft, and begin to decay, which is commonly about a Month after they are gather'd, when they will be fit to be eaten; before which they are so very harsh, that it is almost impossible to eat them.

The third Sort is so very common in England, that it would be to little Purpose to spend much Time in treating of it, since the great Use to which it is apply'd in England, is to make Fences, the manner of doing which is already described under the Article of Fences and Hedges; but I would only mention in this Place, that there are two or three Varieties of this Plant, commonly observed in the Hedges near London, which differ in the Size of their Leaves and Fruit; but that Sort which produces the smallest Leaves is the best worth cultivating for Hedges, because their Branches always grow close together, so that the Hedge will clip much closer, and appear more beautiful: for it is a common Observation, that the Branches of all Sorts of Trees grow in a proportionable Distance to the Size of their Leaves.

The fourth Sort is a Variety of the third, from which it differs in having fair double Flowers. This is propagated by being budded or grafted upon the common Sort, and may be train'd up with regular Stems to the Height of twelve or fourteen Feet, and when planted in Wildernesses or other Plantations of Trees.

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Trees, being intermix'd with other flowering Trees of the same Growth, makes a very fine Appearance, during the Season of its Flowering, which is commonly most part of *May*; the Flowers being produced in large Clusters, as in the common Sort, but are very double: This Tree is pretty common in the Nurseries near *London*.

The *Azarola* or *Neapolitan Medlar*, has been introduc'd from *Italy*, where the Fruit is greatly esteem'd. This is also propagated by budding or grafting it upon Stocks of the common *Hawthorn*, and should be transplanted into a moist Soil and a warm Situation, where it will produce great Quantities of Fruit annually in *England*, which are shap'd like those of the common *Hawthorn*, but much larger, and must be preserv'd till they begin to decay before they are eaten, as the common *Medlar*.

I have observ'd these Trees in many Places planted against warm Walls, as supposing them too tender to produce Fruit in this Climate, without such Assistance; which is a very great Mistake, for I have seen much more Fruit upon Standard Trees than were upon those against Walls, and they ripen'd well and were better tasted.

The *Pyracantha* or *Ever-green Thorn*, was formerly in greater Esteem than at present; it is commonly planted against Walls or Buildings, where it affords an agreeable Prospect in Winter, (especially if it has Plenty of Fruit) the Fruit being at that Season of a beautiful red Colour, and are commonly produced in very large Clusters, which together with its ever-green Leaves, renders it worthy of a Place in every good Garden. But in order to have Fruit

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upon every Part of the Tree, in which its greatest Beauty consists, there should always be a Succession of young Branches train'd in, for the Fruit is always produc'd upon the second and third Years Wood; and all those Branches which are older never produce any; for want of rightly observing this Method, most of the Trees of this Kind seldom have any Fruit but toward their extreme Parts, which is one Reason these Trees have been so much neglected of late Years.

The Branches of this Tree are very flexible, so that it cannot be train'd up to a Standard, but must always have the Assistance of a Wall, or some other Building to support it. It is very hardy, and will grow in almost any Soil or Situation, but it agrees best with a dry Soil, in which it will always produce a greater Number of Fruit.

This may be propagated by laying down the tender Shoots, which are commonly two Years before they will be rooted enough to transplant; (but notwithstanding this, it is a more expeditious Method than to raise them from Seeds, which rarely come up until the second Year, and are but of slow Growth the two succeeding Years) then they may be either planted where they are to remain, or into a Nursery for two or three Years, where you may train them according to the Places where they are design'd to be planted. It is commonly three Years after they are planted out before they begin to produce Fruit.

The *Glastenbury Thorn* is preserv'd in many Gardens as a Curiosity; this often produces some Bunches of Flowers in Winter, and afterwards flowers again at the Season with the common Sort, but doth

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doth in no other respect differ from the common *Hawthorn*; the fabulous Story of its budding on *Christmas-day* in the Morning, flowering at Noon, and decaying at Night, is now with good Reason disbeliev'd; for although it may sometimes happen that there may be some Bunches of Flowers open on that Day, yet, for the most part, it is later in the Year before they appear; but this in a great measure depends on the Mildness of the Season. This Sort may be propagated by budding or grafting it upon the common *Hawthorn*, and should be planted in a warm Situation, which will greatly promote the Flowering in the Winter; for if they are too much expos'd to cold Winds, the Flower-buds will decay without opening, tho' in other respects the Plant is equally as hardy as the common Sort, and may be treated in the same manner.

The *Cockspur Hawthorn* is of larger Growth than any of the former, and is very hardy: This may be propagated by sowing the Seeds in the same manner as the common *Hawthorn*, and they commonly abide in the Ground till the second Year, as they do; therefore the most expeditious Way to increase this Plant is to bud or graft it upon the common *Hawthorn*, tho' I must confess, that the Trees thus propagated will not arrive to the Magnitude as those generally do which are propagated from Seeds, but will produce Fruit much sooner; but where a Person intends to have them in Perfection, they should always be propagated from Seeds. This Sort will grow to the Height of eighteen or twenty Feet, and may be train'd up with regular Stems and Heads, and when planted amongst other Trees of the same

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Growth, they make an agreeable Variety; for in the Spring, when they are in Blossom, they are very pleasing, the Flowers being very large, and are produc'd in great Bunches at the Extremity of their Branches; and in Autumn, when the Fruit is ripe, which is very large, and grows in great Clusters, they have a beautiful Appearance, and are esteem'd very good Feed for Deer.

The ninth, tenth, and eleventh Sorts were brought from *Virginia* several Years since, and are preserved as Curiosities by such Persons as are Lovers of Trees. These may be propagated from Seeds, as the other Sorts, or by budding or grafting 'em upon the common *Hawthorn*; and may afterwards be transplanted into Wilderness Quarters amongst other Trees of the same Growth, where they will afford an agreeable Variety.

The ninth Sort will grow larger than the other two, and if rais'd from Seeds, will equal the *Cockspur Hawthorn*; and the Flowers and Fruit are full as large as those, so that it is very proper to be intermix'd therewith.

The tenth and eleventh Sorts commonly grow to the Size of our common *Hawthorn*, with which they may be intermix'd, for Variety, in Wilderness Plantations. The Fruit of these two kinds are hardly so large as those of the common *Hawthorn*, but whether any of these Fruits are eatable, I don't at present know, tho' I believe they are much the same as the common Sort.

The fourteenth Sort is a Variety of the common *Hawthorn*, which was observ'd some Years since in *Hertfordshire*: but whether the Seeds of this Kind will produce the same again, is what I can't at present

sent determine ; however it may be propagated by budding or grafting it upon the common *Hawthorn*, which is the only sure Method to preserve the Variety ; tho' there is nothing more in it, than that it is uncommon.

The fifteenth Sort has been lately introduced among us from *America* : This is different from the other Sorts in the Shape of the Leaves, and hath no Thorns upon the Branches : but whether the Fruit will continue of the same Colour as the Original, can't as yet be determin'd ; since there are no Plants in *England* large enough to produce Fruit, that I know of. This may be propagated by budding or grafting it upon the common *Hawthorn*, and is worthy of a Place in all curious Collections of Trees.

The twelfth and thirteenth Sorts are of humbler Growth, seldom rising above five or six Feet high, and are proper to intermix with Shrubs of the same Growth, where, by the Variety of their woolly Leaves, together with their Flowers and Fruit, in their Seasons, they add greatly to the Variety of such Plantations : They may be easily propagated by laying down their tender Branches, which, in one Year, will be rooted sufficiently to transplant, when they may be plac'd where they are to remain, or planted into a Nursery, and train'd up to regular Heads ; by which Method they will be less liable to miscarry, than if they were plac'd to remain in the Wilderness immediately.

The twelfth Sort produces great Quantities of Suckers from the Roots, which may be taken off in the Spring, and transplanted into a Nursery two or three Years, until they have acquired Strength enough to transplant for good

where they are to remain ; by which Method they may be greatly increas'd : but the Plants thus rais'd will be more subject to produce a great Number of Suckers from their Roots, which, if not yearly taken off, will grow up into a Confusion, and starve the old ones.

They produce their Flowers in *April* and *May*, and their Fruits are commonly ripe in *August* : but these are of no Use, except to propagate the Plants ; which being a tedious Method, and the Layers taking Root so freely, renders it not worth practising ; tho' it may happen that some Varieties may be obtain'd this Way, as is often found in many other Trees and Shrubs.

METHONICA : The Superb Lily ; *vulgo*.

The Characters are ;

It hath a fleshy Root in Form of a strait Ruler, which is venomous : The Stalk is climbing : The Leaves grow alternately, and shap'd like those of the Lily, but have a Clasper at the End : The Flower is naked, consisting of six Leaves, which are elegantly sinuated, feather'd, and reflex'd back, with six Stamina (or Threads) ; in the Centre of which is the Ovary, which becomes an oval Fruit, divided into three Cells, containing several round Seeds.

There is but one Species of this Plant at present known, which is,

METHONICA ; *Malabarorum*. H. L. *Malabar Methonica*, or The Superb Lily of Ceylon.

This beautiful Plant is propagated by parting the Roots in *August* (when the green Leaves are decay'd) ; which should be planted into Pots fill'd with light sandy Earth, and may be expos'd to the open Air for about a Fortnight or three Weeks after, placing the Pots where they may have the Morning Sun till

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till eleven a Clock; and if the Season should prove very dry, you must now and then gently refresh them with Water, but you must avoid giving them too much (especially while the Roots are unactive) which will rot them in a short Time.

Toward the End of *August* or the Beginning of *September*, you must remove the Pots into the Stove, placing them where they may have free Air, but so as to have a warm Situation, observing, as was before directed, to refresh them gently with Water, but not to give them much until they appear above-ground, which is commonly in *November*, provided they have Warmth enough, otherwise they will not come up till after *Christmas*: When the Leaves begin to appear above-ground, you must increase the Quantity of Water before given them, and place a Stick down by the Root, to which the Stem should be fasten'd to support it, otherwise it will trail upon the Ground: You should also observe to place the Pots so that they may not stand too near any large growing Plants which may hang over them, whereby these Plants will be drawn up, which will prevent their Flowering; but they must, at this Season, be kept pretty warm, in order to encourage them to flower. The Heat with which they thrive best is about ten Degrees above temperate, (as mark'd on Mr. *Fowler's Botanical Thermometers*) but you must never let them have a less than temperate Heat, lest the Roots should perish.

The Off-sets taken from the old Roots are commonly two or three Years before they flower; during which time they should not be transplanted: but the Earth in the

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upper Part of the Pots should be taken out, and fresh put in every Year to encourage the Roots, being very careful in doing this not to injure or disturb the same. In *July* and *August* the Pots may be expos'd to the open Air, if the Season be warm, but all the other Part of the Year they must be continu'd in the Stove.

MEUM. Spignel.

The Characters are;

It is an umbeliferous Plant, with very narrow Leaves: The Seeds are large, oblong and striated: To which may be added, it hath a perennial Root.

This Plant is propagated in the *Physick-Gardens*, for Medicinal Use, but is very seldom found in other Gardens. It may be propagated by Seeds, which should be sown in Autumn soon after they are ripe; and in the Spring the Plants will appear, when they should be carefully clear'd from Weeds, and in very dry Weather must be refresh'd with Water. In this Place the Plants may remain until the Autumn following, when they may be transplanted into a shady Border about a Foot asunder, where they may remain for Use. They may also be propagated by parting their Roots in Autumn, which is the most expeditious Method.

MEZEREON; *vide* Thymelea.

MILDEW is a Disease that happens to Plants, and is caus'd by a dewy Moisture which falls on them, and continuing for want of the Sun's Heat to draw it up, by its Acrimony corrodes, gnaws and spoils the inmost Substance of the Plant, and hinders the Circulation of the nutritive Sap, upon which the Leaves begin to fade, and the Blossoms and Fruit are much prejudic'd. Or,

Mildew

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Mildew is rather a concrete Substance, which exsudes thro' the Pores of the Leaves.

What the Gardeners commonly call *Mildew*, is an Insect which is frequently found in great Plenty preying upon this Exsudation.

Others say, That *Mildew* is a thick clammy Vapour exhal'd in the Spring and Summer from Plants, Blossoms, and even the Earth itself, in close still Weather, where there is neither Sun enough to draw it upwards to any considerable Height, nor Wind of Force strong enough to disperse it, and that it hanging in the lower Regions, when the Cold of the Evening comes on, condenses and falls on Plants, and with its thick clammy Substance stops the Pores, and by that means prevents Perspiration, and hinders the Sap from ascending to nourish their Flowers, Shoots, &c.

Others say, That *Mildew* is a corrosive or nipping Dew, proceeding from the Vapours that are exhal'd by the Earth, which being drawn up, and falling down again on the tender opening Buds, infects them by its Acrimony, and hinders the Circulation of the nutritious Sap in the proper Vessels; upon which the Leaves begin to fade, and the Blossoms and Fruit receive a very great Prejudice.

Some make this Observation, That the Places most liable to *Mildew*, are inclos'd Grounds and Valleys, and those that lie tending to the East; and the Reasons that they give why those Grounds which lie from the Horizon to the East are most subject to *Mildew* and *Blastings*, may be by the Sun's attracting those Vapours towards it after the manner that a great Fire in a Room draws the Air to it: So the

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Sun having set these in Motion, and not having Strength enough to draw them into the middle Region, to form them into a Cloud, he does yet draw them till he is below our Horizon, and then these *Dews* tend to the Earth from whence they were exhal'd, and in Motion to the West, do, as it were, fall upon that Ground which lies Eastward at right Angles, and therefore is most offensive to them.

But I take the true Cause of the *Mildew* appearing most upon Plants which are expos'd to the East, to proceed from a dry Temperature in the Air when the Wind blows from that Point, which stops the Pores of Plants and prevents their Perspiration, whereby the Juices of the Plants are concreted upon the Surface of their Leaves, which being of a sweetish Nature, Insects are inticed thereto, where finding proper Nutriment, they deposite their Eggs, and multiply so fast as to cover the whole Surfaces of Plants, and by their corroding the Vessels, prevent the Motions of their Sap; and it is very probable that the Excrements of these Insects may enter the Vessels of Plants, and by mixing with their Juices may spread the Infection all over them: For it is observable, that whenever a Tree has been greatly affected by this *Mildew*, it seldom recovers it in two or three Years, and many times never is entirely clear from it after.

MILIUM; Millet.

The Characters are;

It hath a loose divided Pannicle; and each single Flower hath a Calyx consisting of two Leaves, which are instead of Petals, to protect the Stamina and Pistillum of the Flower, which afterwards becomes an oval shining Seed.

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The Species are;

1. MILIUM; *femine luteo*. C. B. P. Yellow or Common Millet.
2. MILIUM; *femine albo*. C. B. P. Millet, with a white Seed.
3. MILIUM; *femine nigro*. C. B. P. Millet, with a black Seed.
4. MILIUM; *Arundinaceum, subrotundo femine, Sorgo nominatum*. C. B. P. Reed-like Millet, with roundish Seeds, commonly call'd Sorgo or Guiney Corn.

There are some other Varieties of these Plants which chiefly differ in the Colour of their Seeds, which will be to little Purpose to enumerate in this Place, those here mention'd being the principal Sorts which I have observ'd growing in England.

The three first Sorts are Varieties of each other, and only differ in the Colour of their Seeds, which Difference will arise from the same Seeds very often; but the Yellow is always preferr'd, though the White is no way inferior to it, but the Black Sort is esteem'd little worth.

These Plants were originally brought from the Eastern Countries, where they are still greatly cultivated, from whence we are furnished annually with this Grain, which is by many Persons greatly esteem'd for Puddings, &c. These are never cultivated in England, but by way of Curiosity in small Gardens, where the Seeds do generally ripen very well.

They must be sown the Beginning of April upon a warm dry Soil, but not too thick, because these Plants divide into several Branches, and should have much Room; and when they come up, they should be clear'd from Weeds, after which they will, in a short time, get the better of them, and

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prevent their future Growth. In August these Seeds will ripen, when it must be cut down and beaten out, as is practis'd for other Grain.

The Guiney Corn arises commonly to be ten or twelve Feet high, and has jointed Stalks like the Reed; upon the Tops of which the Panicles are produc'd, which are very large, as are also the Grains. This Sort will come up very well, if sown as the former, but seldom perfects its Seeds with us, except the Season be very warm.

MILLEFOLIUM; Yarrow, Milfoil, or Nose-bleed.

There are several Sorts of this Plant, which are cultivated in Botanical Gardens for Variety; but as they are rarely propagated for Use, I shall pass them over without naming them, and only observe, that the common Sort, which grows in great Plenty upon dry Banks in most Parts of England, is that which is order'd for Medicinal Use.

MIMOSA: The Sensitive Plant.

The Characters are;

The Flower consists of one Leaf, which is shap'd like a Funnel, having many Stamina in the Center: These Flowers are collected into a round Head: From the Bottom of the Flower rises the Pistillum, which afterwards becomes an oblong, flat, jointed Pod, which opens both ways, and contains in each Partition one roundish Seed.

The Species are;

1. MIMOSA; *sen frutex sensibilis*. Tourn. The common Sensitive Plant.
2. MIMOSA; *humilis, frutescens, & spinosa, siliquis conglobatis*. Plum. Dwarf Shrubby Humble Plant, having Thorns, and the Pods growing together in Bunches.

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3. MIMOSA; *spinis horridiuscula*, & *sensitiva magis*. H. R. Par. Greater Sensitive (or Humble Plant) with very sharp Thorns.

4. MIMOSA; *latifolia*, *Siculis in orbem glomeratis*. Tourn. Broad-leav'd or Common Humble Plant.

5. MIMOSA; *spuria de Pernambuco*, dicta *Mimosa Italica*. Zan. The Slothful Sensitive Plant; *vulgô*.

6. MIMOSA; *frutescens* & *spinosa*, *tenui Acacie folio*, *siliculis plurimis villosis*, *in capitulum congestis*. Houst. Prickly Shrubby Sensitive Plant, with narrow Acacia Leaves, having many hairy Pods, collected into a Head.

7. MIMOSA; *herbacea procumbens* & *spinosa*, *caule anguloso*, *siliquis quadrivalvibus*. Houst. Trailing Prickly Sensitive Plant, with angular Stalks and Pods, opening in four Cells.

8. MIMOSA; *aquatica herbacea procumbens*, *non spinosa*, *flore luteo pleno*. Houst. Water Trailing Sensitive Plant, without Spines, having a full yellow Flower.

There are some other Species of this Plant which grow in the warm Parts of *America*, but those here mention'd, are what I have observ'd in the *English* Gardens.

The first Sort is commonly known by the Name of *Sensitive Plant*, to distinguish it from the others, which are generally call'd *Humble Plants*, because upon being touch'd, the Pedicle of their Leaves falls downward, whereas the Leaves of the other Sort are only contracted upon the Touch.

These Plants are all propagated from Seeds, which must be sown upon a Hot-bed early in the *Spring*; and when the Plants come up, they must be transplanted into small Pots fill'd with light rich Earth, and plung'd into a fresh

Hot-bed, observing to water and shade them until they have taken Root: After which you must often refresh 'em with Water, and let 'em have Air in Proportion to the Warmth of the Season, always observing to keep the Bed in a good Temper for Heat, as also to cover the Glasses every Night with Mats, which will greatly facilitate their Growth.

With this Management, in about a Month's time, the Plants will have greatly advanc'd, and their Roots will fill the Pots; therefore you must remove them into larger Pots, by shaking them out of those they are in, together with the Earth, which should be preserv'd to their Roots; and (after having pared off the Roots which were matted round the Outside of the Ball of Earth) you must place the Plants into the larger Pots, filling them up with the like rich Earth; then plunge them into the Hot-bed, observing to water them well until they have taken Root; and if you see the Plants inclinable to droop, when the Sun shines warm upon the Glasses, you must shade them until they have recover'd and are able to endure the Heat.

You must also observe to give them a greater Share of Air, as the Season advances in Warmth, but you must never expose them to the open Air, which will not only retard their Growth, but also destroy the sensitive Quality; so that I have seen some Plants of these Kinds, which after having been expos'd to the open Air a few Days, have intirely lost their Motion.

The first of these Sorts, if duly water'd and preserv'd in a kindly Warmth, will grow, in the Compass of one Season, to the Height

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of eight or nine Feet, and produce great Quantities of Flowers, but unless the *Autumn* proves very favourable, the Seeds do seldom ripen, and the Plant being much tenderer than the other Sorts, is rarely preserv'd through the *Winter*, tho' plac'd in the warmest Stoves, so that we are oblig'd to procure the Seeds from Abroad.

The second Sort is of much humbler Growth, seldom rising above two Feet high, but branches out very much, and is beset with Thorns: This will abide two or three Years, if preserv'd in a good Stove, and generally produces Seeds every Year, so that it is now become very common in the *English* Gardens, being the easiest to preserve, and the most plentiful in seeding of all the Sorts.

The third Sort hath very broad Leaves, and is greatly beset with sharp Thorns: This will rise to the Height of five or six Feet, but has generally very slender Branches, and is tenderer than the last-mention'd: It rarely produces Seeds in this Country, but may be preserv'd through the Winter in a very good Stove.

The fourth Sort has the quickest Motion of all the Kinds at present in *England*: This is somewhat like the third in Appearance, but grows more erect, and hath fewer Spines, and the Flowers are of a different Colour. The Seeds of this kind are frequently brought over from *Barbados*, where, by the Plenty of Seeds brought over, it seems to be the most common in that Country.

The fifth Sort is preserv'd in Botanick Gardens for Variety, but is a Plant of no great Curiosity: It hath somewhat the Appearance of the first Sort, and will grow

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erect to the Height of five or six Feet, and produce great Quantities of Seeds; but it having no Motion upon being touch'd, renders it less valuable than the others.

These Plants were most of them thought to be Annuals formerly, because upon the first Approach of cold Weather they were destroy'd; but since the modern Invention of Bark-stoves, most of these Sorts have been preserv'd two or three Years, and do produce Seeds very well.

The Stove in which these Plants are placed in *Winter*, should be kept to *Anana's* Heat (as mark'd on Mr. *Fowler's Thermometers*;) and during that Season they should be frequently refresh'd with Water, which must be plac'd in the Stove at least twenty-four Hours before it be used, that it may have nearly an equal Warmth to the Air of the Stove; but you must not give it to them in large Quantities, which will rot their Roots, and cause them to decay: You must also observe to pick off all decay'd Leaves which may appear at that Season; which, if not taken off, will harbour Insects, to the great Prejudice of the Plants.

But where there is not the Conveniency of a good Stove to preserve these Plants through the *Winter*, their Seeds may be annually procured, and a few Plants rais'd, which may be kept in a Hot-bed under Glasses, where they will continue until the Cold approaches in *Autumn*, and, being a great Curiosity, are worthy of Care in every good Garden.

MINT; *vide* *Mentha*.

MIRABILIS PERUVIANA; *vide* *Jalapa*.

MISLETOE; *vide* *Viscum*.

MITELLA; American Sanicle.

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The Characters are;

It hath a perennial Root: The Cup of the Flower consists of one Leaf, and is divided into five Parts: The Flower consists of five Leaves, which expand in Form of a Rose: The Ovary becomes a roundish Fruit, which terminates in a Point, gaping at the Top, in Form of a Bishop's Mitre, and full of roundish Seeds.

The Species are;

1. MITELLA; *Americana, florum petalis integris*. Tourn. American Mitella, whose Flower-leaves are intire.

2. MITELLA; *Americana, florum petalis fimbriatis*. Tourn. American Mitella, with fringed Flower Leaves.

3. MITELLA; *Americana, flore squallide purpureo, villoso*. Boerb. Ind. American Mitella, with hairy Flowers, of a dirty purple Colour.

4. MITELLA; *Americana, maxima, Tinctoria* Inst. R. H. American Mitella, whose Seed is used in Dying, commonly call'd Anotto or Arnotta in America.

The three first Sorts are preserv'd in curious Botanick Gardens for Variety; but there being very little Beauty in their Flowers, they are seldom propagated in Gardens for Pleasure. They are very hardy, and will thrive in almost any Soil or Situation, and may be propagated either from Seeds, or by parting their Roots, which may be done either in Spring or Autumn, in the manner as is practis'd for *Polyanthus's*, &c. and being planted in a shady Situation, will grow very vigorously; so that, for the Sake of Variety, a few Roots may be admitted in shady Borders where few better Plants will thrive.

The fourth Sort grows in the warmest Parts of America, where it rises to the Height of sixteen Feet, and produces large Bunches

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of Flowers, which are succeeded by rough Pods, in which are contain'd many red Seeds. The Seeds of this Plant are used for dying a Chocolate Colour, and by some are used in Medicine.

This Plant may be rais'd from the Seeds which are brought frequently to England. They must be sown on a Hot-bed, and when the Plants are come up, they must be transplanted each into a small Pot filled with light Earth, and plunged into a Hot-bed of Tan-ners-Bark, observing to water and shade 'em until they have taken root, after which they must be treated in the same manner as hath been directed for the *Anona*, to which the Reader is referr'd, to avoid Repetition.

MOLDAVICA; Turkey Balm.

The Characters are;

It is a Plant with a labiated Flower, consisting of one Leaf, whose Upper-lip is arch'd, cut into two Parts, and reflex'd: The Under-lip is also divided into two Parts, both ending in border'd Faws: The Flower-cup is hollow, and generally cut into two unequal Lips, out of which arises the Pointal, attended with four Embryo's, which afterwards become so many oblong Seeds.

The Species are;

1. MOLDAVICA; *betonica folio, flore caeruleo*. Tourn. Turkey Balm, with a Betony Leaf, and a blue Flower.

2. MOLDAVICA; *betonica folio, flore albo*. Tourn. Turkey Balm, with a Betony Leaf, and a white Flower.

3. MOLDAVICA; *betonica folio, flore purpuro-caeruleo*. Tourn. Turkey Balm, with a Betony Leaf, and a purplish blue Flower.

4. MOLDAVICA; *Orientalis, betonica folio, flore magno, violaceo*. T.

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Cor.

Cor. Eastern *Moldavica*, with a Betony Leaf, and a large Violet-colour'd Flower.

5. *MOLDAVICA*; *Orientalis, salicis folio, flore parvo caruleo.* T. *Cor.* Eastern *Moldavica*, with a Betony Leaf, and a large whitish Flower.

6. *MOLDAVICA*; *Orientalis, salicis folio, flore parvo caeruleo.* T. *Cor.* Eastern *Moldavica*, with a willow Leaf, and a small blue Flower.

7. *MOLDAVICA*; *Orientalis, salicis folio, flore parvo albo.* T. *Cor.* Eastern *Moldavica*, with a willow Leaf, and a small white Flower.

8. *MOLDAVICA*; *Americana, trifolia, odore gravi.* Tourn. Three-leav'd American *Moldavica*, with a strong Scent, commonly call'd The Balm of Gilead.

The seven first *Species* are annual Plants, which perish soon after they have perfected Seeds: These may be propagated by sowing their Seeds in *March*, upon a Bed of fresh light Earth, in a warm Situation; and when the Plants are come up about two Inches high, they should be transplanted into the Borders of the Pleasure-Garden, observing to water 'em until they have taken Root: After which they will require no farther Care but to keep them clear from Weeds; and if they grow pretty tall, to support them with Sticks, to prevent their being broken by Winds.

In *June* and *July* they will produce their Flowers; and in *August* their Seeds will be perfected, when they must be gather'd, and preserv'd dry for the succeeding Spring.

The Seeds may also be sown upon a warm Border in *August*, where the Plants will come up soon after, and will endure the Cold of our ordinary Winters very

well, provided they have a dry Soil, and a warm Situation.

In the Spring they may be transplanted out into the Borders where they are design'd to be continu'd, where they will flower early, and produce good Seeds; whereas it sometimes happens, that if the Season proves cold and wet, those Plants which are sown in the Spring do not perfect their Seeds.

There is no very great Beauty in these Plants; but as they require little Culture, so they may be admitted into large Borders of the Flower-Garden, where being intermix'd with other Plants, they afford an agreeable Variety. The most valuable Sorts are the two Oriental Kinds with large Flowers; these commonly grow about eighteen Inches high, and divide into several Branches, but do not take up much Room; and being annual Plants, there will be no Danger of their injuring others that may grow near them.

The eighth Sort is an abiding Plant, which may be easily propagated by planting Cuttings, during any of the Summer Months, in a Border of rich Earth, observing to water and shade 'em until they have taken Root, which they do commonly in about three Weeks time; after which they will require no farther Care than only to keep them clear from Weeds, 'till they have made considerable Progress, when they should be taken up, preserving a Ball of Earth to each Plant, and set into Pots fill'd with fresh light Earth, placing them in a shady Situation until they have taken fresh Root; after which, they may be expos'd to the open Air until the Middle or Latter-end of *October*, when they must be remov'd

remov'd into Shelter, otherwise they will be liable to suffer by hard Frosts: Tho' they should be plac'd where they may enjoy as much free Air as possible in mild Weather, and only require to be protected from severe Cold; for in moderate Winters I have had them endure abroad very well, when planted under a warm Wall.

They will require frequently to be water'd when planted in Pots; but in the Winter you should not let 'em have it in great Quantities, which will be apt to rot their Roots, and destroy 'em. This last *Species* is preserv'd in several Gardens, for its Oddness, and the strong balsamick Scent which the Leaves emit, upon being bruis'd; which gave occasion to many Persons formerly to suppose the *Balm of Gilead* was taken from this Plant.

MOLLE: The Indian Molle, or Mastick Tree.

The *Characters* are;

It hath pinnated Leaves, like those of the Lentiscus, but are terminated by an odd Lobe; the Flower expands in the Form of a Rose; and the Fruit resembles a Grain of Pepper.

We have but one *Species* of this Tree in England, which is,

MOLLE; *Clus. in Monard.* The Arbor Molle, or Indian Mastick Tree.

This Tree is preserved in many curious Gardens in England, but rarely produces any Flowers in this Country.

It may be propagated by laying down the tender Branches, which in two Years will take Root, when they may be taken off from the old Plants, and planted into Pots fill'd with fresh, light Earth, ob-

serving to water and shade 'em until they have taken Root.

But as it is very difficult to make this Tree grow from Layers, so it will be necessary to slit the Branches when lay'd, which will facilitate their Rooting; and when you cut them off from the old Plants (which should be done in *April*) if you place the Pots upon a moderate Hot-bed, it will cause them to take Root much sooner, provided you water and shade 'em carefully; but you must observe to let them have Air in Proportion to the Warmth of the Season; and when they have taken fresh Root; you must inure them to the open Air by Degrees, into which they should be removed toward the latter End of *May*, placing 'em in a Situation where they may be defended from violent Winds, in which they may remain until the *October* following, when they must be removed into the Green-house, placing them where they may have a great Share of free Air in mild Weather, for they only require to be protected from severe Cold.

This Tree will grow to the Height of seven or eight Feet, but commonly produces its Shoots very irregular, so that it is very difficult to form it to a regular Head, for which Reason it is not so much esteem'd (except by the Curious in *Botany*) as the *Lentiscus*; but for Variety it may have a Place in all curious Green-houses.

MOLUCCA; Molucca Balm.

The *Characters* are;

It is a verticillate Plant with a labiated Flower, consisting of one Leaf, whose upper Lip is hollow, like a Spoon, but the under Lip is cut into three Segments; out of the Flow-

ex-cup arises the Pointal, attended, as it were, by four Embryo's, which afterwards turn to so many angular Seeds, which are inclos'd in the Bell-shap'd Calyx.

The Species are ;

1. *MOLUCCA* ; *levis*. Dod. Smooth *Molucca* Balm.

2. *MOLUCCA* ; *spinosa*. Dod. Prickly *Molucca* Balm.

These Plants are annual, seldom abiding after they have perfected their Seeds. They are preserved only in such Gardens where a great Variety of Plants are maintain'd, being Plants of no great Beauty or Use. These may be propagated by sowing their Seeds in *March*. upon a Bed of fresh, light Earth, in an open Situation, where the Plants will come up soon after ; and when they are about two Inches high, they must be transplanted out, either into fresh Beds of light Earth, or in the Borders of the Pleasure-Garden, placing 'em at two Feet Distance, for their Branches will extend pretty far, if the Soil be rich ; and when they have taken Root they will require no farther Care, but only to keep 'em clear from Weeds, and fasten them to Sticks to prevent their being broke by Winds when they advance.

In *July* these Plants will flower, and if the Season proves warm, their Seeds will be perfected in *September*, but if the Season be cold and moist, they commonly perish without producing good Seeds in this Country: For which Reason these Plants should be rais'd in *Autumn*, and preserved through the Winter under a common Frame, and in the Spring transplanted out, as before, when they will flower early, and produce good Seeds.

MOLY ; Wild Garlick.

The Characters are ;

It agrees in every respect with the Garlick, but hath, for the most part, a sweet Scent ; and the Flowers are produced in an Umbel.

The Species are ;

1. *MOLY* ; *latifolium*, *Liliflorum*. C. B. P. Broad-leav'd *Moly* of Theophrastus.

2. *MOLY* ; *latifolium*, *Indicum*. C. B. P. Broad-leav'd Indian *Moly*.

3. *MOLY* ; *latifolium* *Hispanicum*. C. B. P. Broad-leav'd Spanish *Moly* with purple Flowers.

4. *MOLY* ; *latifolium*, *flavo flore*. H. Eyst. Broad-leav'd yellow *Moly*.

5. *MOLY* ; *angustifolium*, *umbellatum*. C. B. P. Narrow-leav'd *Moly*, commonly call'd Homer's, or Dioscorides's *Moly*.

6. *MOLY* ; *angustifolium*, *foliis reflexis*. C. B. P. Narrow-leav'd *Moly*, with reflex'd Leaves, commonly call'd The Serpent *Moly*.

7. *MOLY* ; *moschatum*, *capillaceo folio*. C. B. P. The sweet *Moly* of Montpellier, *vulgô*.

There are some other Varieties of this Plant, which are preserv'd in curious *Botanick* Gardens abroad, but those here mention'd are what I have observed in the *English* Gardens.

They are all very hardy Plants, and may be easily multiplied by their Off-sets, which they send forth in great Plenty: The best Season to transplant them is in *August* or *September*, just after their Leaves decay ; for if they are permitted to remain long after, and the Season should prove moist, they will send forth fresh Fibres, when it will be too late to remove 'em, unless they are taken up with Balls of Earth.

They will grow in almost any Soil or Situation, but will thrive best

best in a light, sandy Soil, and an open Exposure.

They commonly produce their Flowers in *May* and *June*, except the *Sweet-scented Montpelier* kind, which seldom flowers till *August*, and are pretty Varieties in the large Borders of the Pleasure-Garden, where, being intermix'd with other bulbous-rooted Flowers, they afford an agreeable Variety; but they should not be permitted to remain longer than two Years before they are transplanted, because they produce a great Number of Off-sets, (especially *Homer's Moly*) which, if not taken from the old Roots, will starve 'em and cause their Flowers to be very weak.

MOMORDICA : Male Balsam-Apple.

The Characters are;

The Flower consists of one Leaf, is of the expanded, bell-shap'd kind, but so deeply cut, as to appear compos'd of five distinct Leaves: These Flowers are some Male, (or barren), others Female, growing upon the Top of the Embryo, which is afterwards chang'd into a Fruit, which is fleshy, and sometimes more or less tapering, and hollow; and when ripe, usually bursts, and casts forth the Seeds with an Elasticity; which Seeds are wrapped up in a membranous Covering, and are, for the most part, indented on their Edges.

The Species are;

1. **MOMORDICA**; *vulgaris*. Tourn. The common Male Balsam-Apple.

2. **MOMORDICA**; *Zeylanica, pampinea fronde, fructu breviori*. Tourn. Male Balsam-Apple of Ceylon, with Vine-leaves and a short Fruit.

3. **MOMORDICA**; *Zeylanica, pampinea fronde, fructu longiori*. Tourn. Male Balsam-Apple of Ceylon, with Vine-leaves and a longer Fruit.

4. **MOMORDICA**; *Americana, fructu reticulato, sicco*. Com. Rar. Male Balsam-Apple, of America, with a dry netted Fruit.

These Plants are all annual, their Seeds must be sown on a Hot-bed the Beginning of *March*, and when the Plants come up, they should be transplanted out into a fresh Hot-bed, after the Manner of *Cucumbers* or *Melons*, putting two Plants of the same kind, under each Light, and the Plants water'd and shaded until they have taken Root; after which they must be treated as *Cucumbers*, permitting their Branches to extend upon the Ground in the same Manner, and observe to keep them clear from Weeds.

With this Management (provided you do not let them have too much Wet, or expose 'em too much to the open Air) they will produce their Fruit in *July*, and their Seeds will ripen in *August*, when you must observe to gather it as soon as you see the Fruit open, otherwise it will be cast abroad, and with Difficulty gather'd up again.

These Plants are preserv'd in curious Gardens for the Oddness of their Fruit; but as they take up a great deal of Room in the Hot-beds, require frequent Attendance, and are of little Beauty or Use, they are not much cultivated in *England*, except in *Botanick* Gardens for Variety.

MORUS: The Mulberry-Tree.

The Characters are;

It hath large, rough, roundish Leaves; the Male Flowers (or *Katkins*, which have a Calyx consisting of four Leaves) are sometimes produced upon separate Trees, at other times at remote Distances from the Fruit on the same Tree: The Fruit is compos'd of several Protuberances,

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to each of which adhere four small Leaves; the Seeds are roundish, growing singly in each Protuberance.

The Species are;

1. MORUS; *fructu nigro*. C. B. P. The common Black Mulberry.

2. MORUS; *fructu albo*. C. B. P. The White Mulberry.

3. MORUS; *fructu nigro, minori, foliis eleganter laciniatis*. Tourn. The lesser Black Mulberry, with Leaves neatly jagged.

4. MORUS; *fructu albo, minori, ex albo purpurascete*. Tourn. The small Purplish-white Mulberry.

5. MORUS; *Virginiana, foliis latissimis scabris, fructu rubro longiori*. Cat. Plant. Hort. The broad-leav'd Virginian Mulberry, with long red Fruit.

6. MORUS; *Virginienfis arbor, Loti arboris instar ramosa, foliis amplissimis*. Pluk. Phyt. The large-leav'd Virginian Mulberry, with blackish Shoots, somewhat like those of the Lote or Nettle-Tree.

The first of these Sorts is very common in most Gardens, being planted for the Delicacy of its Fruit: It may be propagated by sowing the Seeds, or by laying down the tender Branches, which in two Years will take Root, and may then be transplanted into the Places where they are to remain. Those Plants which are propagated from Seeds are commonly the most vigorous, and generally make the straitest Stems, but then there is a very great Hazard of their being fruitful; for it often happens, that such Plants are, for the most part, of the *Male* kind, which produce *Katkins*, but seldom have much Fruit; for which Reason, those who are desirous to have fruitful Trees, should always propagate them by Layers from such Trees as do produce Plenty of

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good Fruit. But as the Trees thus rais'd are subject to have crooked, unsightly Stems, so there should be Care taken in the Choice of strait Shoots to make Layers; and when they are transplanted out, they should have strait Stakes fix'd down by each, to which they should be fasten'd as the Shoot is extended, until it comes to the Height you design the Stem; then you may suffer the Branches to extend as they are inclinable, for this Tree should not be often prun'd, but only such Branches should be cut off which shoot cross, and bruise themselves by rubbing against each other, and such as decay should also be cut off.

This Tree delights in a light Soil, not too wet nor over dry, and should have an open Exposure; for if it be planted too near to other Trees or Buildings, so as to be shaded thereby, the Fruit seldom ripens well; though if they are planted in a Situation where they may be defended from the violent *West* and *South-West* Winds, which very often blow down and destroy great Quantities of the Fruit, it will be of great Advantage; but they should always be open to the *East* and *South-East* Sun, which is of great Service in drying up the Moisture which lodges upon the Surface of their Leaves in the Night, and not only retards the Fruit, but renders it ill-tasted and watry.

The Soil under these Trees should also be every Year well dug and manured, tho' there will scarce any Sorts of Plants grow under them; but it is of great Advantage to the Fruit, notwithstanding what may have been said to the contrary.

The *White Mulberry* is commonly cultivated for its Leaves, to feed

Silk-

Silk-worms. In *France, Italy, &c.* though the *Persians* always make use of the common *Black Mulberry* for that Purpose; and I have been assured by a Gentleman of Honour, who hath made Trial of both Sorts of Leaves, that the Worms fed with those of the Black Sort, produce much better Silk than those fed with the White; but he observes, that the Leaves of the Black Sort should never be given to the Worms, after they have eaten for some time of the White, lest the Worms should burst, which is often the Case when they are thus treated.

The Trees which are design'd to feed Silk-worms, should never be suffer'd to grow tall, but rather kept in a Sort of Hedge, and instead of pulling off the Leaves singly, they should be shear'd off together with their young Branches, which is much sooner done, and not so injurious to the Tree.

This White Sort may be propagated either from Seeds or Layers, as the *Black Mulberry*, and is equally as hardy: There are two or three Varieties of this Tree, which differ in the Shape of their Leaves, Size, and Colour of their Fruit; but as they are of no other Use than for their Leaves, so the strongest shooting and the largest-leav'd Sort should be preferr'd.

The *Large-leav'd Virginian* Sort, with long red Fruit, is at present very scarce in *England*, though it seems to be the common Sort, which grows spontaneously in the Woods of *America*: This may be propagated from Seeds, or by laying down the Branches, as the common Sort; it is very hardy, and will endure the Cold of our Winters in the open Air very well. The Leaves of this kind are very large,

and seem to be as proper for feeding of Silk-Worms as those of the common Sort; so that if ever the Project of establishing a *Silk Manufactory* in the *West-Indies* should be set on foot, there would be no Occasion of their sending over for *Mulberry-Trees*, as hath been by some propos'd, since they will find a sufficient Quantity in all the Woods of that Country.

The *Large-leav'd Virginian Mulberry* with black Shoots, is still more uncommon than any of the former: There is a large Plant of this kind growing in the Gardens of the Bishop of *London* at *Fulham*, which has been several Years an Inhabitant of that Garden, but has never produced any Fruit, that I could learn, but hath some Years a great Number of *Katkins*, much like those of the *Hazel-Nut*, which occasion'd Mr. Ray to give it the Name of *Corylus*; but it may be one of the Male Trees, which never produces Fruit, as it sometimes happens in the common Sorts of *Mulberries*, the Leaves being very like those of the *Black Mulberry*, but somewhat larger and rougher.

This Tree has not been propagated yet in this Country, for though it has been budded and grafted upon both the *Black* and *White Mulberries*, yet I can't hear that it hath succeeded upon either; and the Tree being pretty tall, can't be laid down, which is the most likely Method to propagate it: This is very hardy, and will endure the Cold of our Climate in the open Air very well, and is coveted as a Curiosity by such who delight in the Variety of Trees and Shrubs.

MOSS; *vide* Muscus.

MOTHERWORT; *vide* Cardiac.

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MOULD, the Goodness of which may be known by the Sight, Smell, and Touch.

First, by the *Sight*. Those *Moulds* that are of a bright *Chestnut* or *Hazelly* Colour are accounted the best; of this Colour are the best Loams, and also the best natural Earth; and this will be the better yet, if it cut like Butter, and does not stick obstinately, but is short, tolerably light, breaking into small Clods, is sweet, will be tempered without crusting or chapping in dry Weather, or turning to Mortar in wet.

The next to that, the dark-grey and russet *Moulds* are accounted the best: The light and dark Ash Colour are reckon'd the worst, such as are usually found on common or heathy Ground; the clear tawney is by no Means to be approved; but that of a yellowish red Colour is accounted the worst of all; this is commonly found in wild and waste Parts of the Country, and, for the most part, produces nothing but *Goss*, *Furz*, and *Fern*, according as its Bottom is more or less of a light and sandy, or of a spewy Gravel or clayey Nature.

Secondly, by the *Smell*. All Lands that are good and wholesome, will, after Rain or breaking up by the Spade, emit a good Smell.

Thirdly, by the *Touch*. By this Means we may discover whether it consists of Substances intirely arenaceous or clammy, or, according as it express'd by Mr. Evelyn, whether it be tender, fatty, detestive, or slippery, or more harsh, gritty, porous, or friable.

That being always the best that is between the two Extreams, and does not contain the two different Qualities of soft and hard mix'd, of moist and dry, of churlish and

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mild, that is, neither too unctuous or too lean, but such as will easily dissolve; of a just Consistence, between Sand and Clay, and such as will not stick to the Spade or Fingers upon every Flash of Rain.

A *Loam* or *Brick Mould* is not to be disapprov'd, as requiring little Help or Improvement but the Spade, and is esteemed both by the Gardener and Florist.

MULBERRY; *vide* *Morus*.

MULLEIN; *vide* *Verbascum*.

MUSA: The Plantain-Tree.

The *Characters* are;

Musa is a kind of Plant with a polypetalous, anomalous Flower; the upper Petal is excavated or hollowed like a little Boat, and divided into three at the Summit; the hither one is concave, but the inward one pelleted, or in the Form of a Crescent or Half-moon Shield, and accompanied with two little narrow-pointed Leaves: The Calyx passes into a Cucumber-shap'd Fruit, that is soft, fleshy, covered with a Skin, divided, as it were, into three Locuments, in which there appear, as it were, some Rudiments of Seeds.

The *Species* are;

1. **MUSA**; *fructu cucumerino, longiori*. *Plum. Nov. Gen.* The Plantain-Tree, *vulgo*.

2. **MUSA**; *candide maculato, fructu recto, rotundo, brevior, odorato*. *Sloan. Cat.* The Banana-Tree, *vulgo*.

These Plants are very common in the *East* and *West-Indies*, as also in most hot Countries of the World. They are carefully cultivated by the *Planters* in the *West-Indies*, who plant 'em in low, rich Ground, by the Sides of Gullies, where they produce Fruit most Parts of the Year. In *England* they are only preserved as Curiolities, where they

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must be constantly kept in a Bark-Stove ; for though they may be kept alive in another warm Stove, yet they will make very little Progress therein, and do not appear half so beautiful, their chief Ornament being the Largeness of their Leaves, which are sometimes four Feet long, and near two Feet broad ; but as these Plants take up a great deal of Room in the Stove, especially when they arrive to a considerable Size, so it is not convenient to keep more than one Plant of each kind.

During the Summer Season these Plants must be plentifully water'd, for the Surface of their Leaves being large, occasions a great Consumption of Moisture, by Perspiration, in hot Weather ; but in the *Winter* they must be water'd more sparingly, though at that Season they must be often refresh'd, but it must not be given 'em in such Quantities.

The Pots in which these Plants are placed should be large, in proportion to the Size of the Plants, for their Roots generally extend pretty far ; and the Earth should be rich and light. The Degree of Heat with which these Plants thrive best, is much the same with the *Anana*, or *Pine-Apple*, in which I have seen this Plant twelve or fourteen Feet high, but never could observe any Tendency to produce Fruit, tho' I believe they may be brought to Fruit in some of the lofty Stoves which have been lately erected near *London*.

These Plants are easily propagated, by cutting off an old Plant near the Ground, which will occasion their shooting out several young ones from the Root ; which is the Manner they are propagated in the hot Countries ; so that after a Spot

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of Ground is once planted with 'em, they will continue several Years ; for the old Plant producing one large Bunch of Fruit from the Center, when that is ripe and cut off, the whole Plant decays, and several young ones spring up from the Roots, which being produced one after another, successively, afford the Inhabitants Plants of various Size and Age, which produce their Fruit successively, in like manner.

It is the first of these *Species* which is chiefly cultivated in the *West-Indies*, that producing a much larger Bunch of Fruit, is by the Inhabitants greatly prefer'd to the other, which is accounted a very pleasant Fruit, when ripe, and is by many Persons greatly coveted by way of Desert, being softer and more luscious to the Taste, but is not so much esteem'd for Food.

These Plants rise to be fifteen or twenty Feet high in the *West-Indies*, to which Height they generally arrive in about ten Months from their first planting, soon after which they produce their Fruit, and then decay : They are of the quickest Growth of any Vegetable yet known. Sir *Hans Sloane* says, one may almost see them grow ; he cut a young Tree even at the Top with a Knife, which immediately grew up discernably, and in an Hour's Time the middle Leaves, which were wrapped up within the others, were advanced above them half an Inch.

MUSCARI: Musk, or Grape Hyacinth ; *vulgo*.

The Characters are ;

It hath a bulbous Root, the Leaves are long and narrow, the Flower is hermaphroditical, consisting of one Leaf, and shap'd like a Pitcher, and cut at Top into six Segments which
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are reflex'd; the Ovary becomes a triangular Fruit, divided into three Cells, which are full of round Seeds.

The Species are;

1. MUSCARI; *arvense, juncifolium, minus, cæruleum*. Tourn. Common lesser blue Grape-flower, or Muscary.

2. MUSCARI; *arvense, juncifolium, exalbidum, minus*. Tourn. Lesser whitish Grape-flower, or Muscary.

3. MUSCARI; *obsoletiore flore, ex purpura virente*. Clus. Musk Hyacinth or Grape-flower, of a worn-out purple-greenish Colour.

4. MUSCARI; *cæruleum, majus*. Tourn. Greater blue Muscary or Grape-flower.

5. MUSCARI; *arvense, latifolium, purpurascens*. Tourn. Broad-leav'd Muscary or Grape-flower, with a purplish Flower.

6. MUSCARI; *panniculâ comosâ, purpuro-violaceâ*. Boerb. Ind. The feather'd Hyacinth; *vulgô*.

There are some other Varieties of this Plant which are preserv'd in the curious Flower-Gardens in *Holland* and *Flanders*, but those here mention'd are what I have observ'd in the *English* Gardens.

The first Sort is very common in most old Gardens, where, by its plentiful Increase, it is become so troublesome as to render it little esteem'd; for when once these Roots have taken Possession of a Garden, they are scarcely ever eradicated afterward; the smallest Off-sets growing, although they are buried a Foot under the Surface of the Ground. This produces its Flowers in *April* and *May*, and if permitted to remain, will produce ripe Seeds in *June*.

The second Sort is less common than the first, and is preserved by such who are curious in Flowers, though it is a Plant of no great

Beauty; this is propagated by Off-sets, as the common *Hyacinth*, and will thrive in almost any Soil or Situation, but best in that which is warm and dry.

The third Sort is a very despicable Flower, to Appearance, but is chiefly preserv'd for its uncommon Sweetness; this is also increas'd as the former, and produces its Flowers much about the same Season.

The fourth, fifth, and sixth Sorts are also preserved in curious Gardens for Variety, but neither of these have much Sweetness in their Flowers; these are also propagated by Off-sets as the former, but produce their Flowers later in the Season.

The proper Season for taking up the Roots of these Flowers is in *June*, when their Leaves are decay'd; at which Time they should be spread upon Mats, in a dry Place, for a Fortnight, until their Bulbs be dry'd, when they may be laid up, each Sort by itself, until the Beginning of *October*, which is the Season for Planting most of these bulbous-rooted Flowers; and the various Sorts of these may then be intermix'd amongst other Flowers of the same Growth, where, in the Season of their Flowering, they afford an agreeable Variety. These Roots should never be permitted to remain longer than two Years unremoved, for they multiply so fast, that the Number of their Off-sets would greatly weaken the blowing Roots, and cause their Flowers to be very small; and the first Sort, which increases so plentifully, would fill the Borders with Off-sets, so as not to be clear'd out again.

MUSCUS; Moss.

These, though formerly suppos'd to be only Excrescences produced from the Earth, Trees, &c. yet are

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no less perfect Plants than those of greater Magnitude, having Roots, Branches, Flowers, and Seeds, but yet cannot be propagated from the latter by any Art.

The Botanists distinguish these into several *Genera*, under each of which are several *Species*; but as they are Plants of no Use or Beauty, so it would be to no purpose to enumerate them in this Place.

These Plants chiefly flourish in cold Countries, and in the Winter Season, and are many times very injurious to Fruit-Trees, which grow upon cold, barren Soils, or where they are so close planted as to exclude the free Access of Air: The only Remedy in such Cases is to cut down Part of the Trees, and plough up the Ground between those left remaining, and in the Spring of the Year, in moist Weather, you should, with an Iron Instrument made a little hollow, the better to surround the Branches of the Trees, scrape off the Moss, carrying it off the Place; and by two or three times thus cleansing them, together with carefully stirring the Ground, it may be entirely destroy'd from the Trees: But if you do not cut down part of the Trees, and stir the Ground well, the rubbing off the Moss will signify little, for the Cause not being remov'd, the Effect will not cease, but the Moss will, in a short Time, be as troublesome as ever.

MUSHROOMS; are, by many Persons, suppos'd to be produc'd from the Putrefaction of the Dung, Earth, &c. in which they are found; but notwithstanding this Notion is pretty generally received amongst the unthinking Part of Mankind, yet, by the curious Naturalists, they are esteem'd perfect Plants, though their Flowers and Seeds have not,

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as yet, been discover'd. But since they may, and are annually propagated by the Gardeners near *London*, and are (the esculent Sort of them) greatly esteem'd, by most curious Palates, so I shall briefly set down the Method practis'd by the Gardeners who cultivate them for Sale.

But, first, it will not be improper to give a short Description of the true eatable Kind, since there are several unwholesome Sorts which have been, by unskilful Persons, gather'd for the Table.

The true *Champignon*, or *Mushroom*, appears at first of a roundish Form, like a Button, the upper Part of which, as also the Stalk, is very white, but being open'd, the under Part is of a livid Flesh-colour, but the fleshy Part, when broken, is very white: when these are suffer'd to remain undisturb'd, they will grow to a large Size, and explicate themselves almost to a Flatness, and the red Part underneath will change to a dark Colour.

In order to cultivate them, if you have no Beds in your own, or in neighbouring Gardens, which produce them, you should look abroad in rich Pastures, during the Months of *August* and *September*, until you find 'em (that being the Season when they are produced) then you should open the Ground about the Roots of the *Mushrooms*, where you will find the Earth, very often, full of small white Knobs, which are the Off-sets or young *Mushrooms*; these should be carefully gather'd, preserving them in Lumps with the Earth about them; then being provided with a Parcel of new Horse-dung, you should shake out the Litter, if there be any amongst it, and cast it up into a Heap, for seven or eight Days, to heat; then you should dig

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a Trench about three Feet wide, and in Length, according to the Quantity of *Mushrooms* required, or the Plenty of Earth you can procure for that Purpose, into which you should lay the Dung about a Foot thick, covering it over with light rich Earth, about six or eight Inches, into which, on each Side, you should put in some of the Knobs of *Mushroom* Earth, about six Inches asunder.

Then make another Layer of Dung upon this Earth, as before, about eight or ten Inches thick, observing to draw in the Sides, so as not to bury the Knobs of *Mushroom* Earth above half an Inch; then put another Laying of Earth, placing some Knobs on the Sides, as before, and put a third Laying of Dung thereon, still drawing it in narrower, and cover this with Earth, so as to bring it to a Ridge, still placing some Knobs of the *Mushroom* Earth into the Sides, all the Way up; then cover the Bed all over with dry Litter, about half a Foot thick, to prevent the Earth from drying too fast, as also to keep out the Wet, if there should happen to be Rain; and this Litter will retain the moist Vapour which arises from the Fermentation of the Dung, and is of great Service in promoting the Growth of the *Mushrooms*; for it is observed, that too much Drowth or over Moisture is destructive to them, but a *Medium* between both is absolutely necessary for their Production.

When your Bed has been made a Week, you must carefully look over it, (by drawing off the Litter with your Hands) to see if the *Mushrooms* begin to appear; for if they are permitted to remain long in the Bed after they are large enough for Use, they will rot, and

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infect all the young Spawn, or Offsets, so that all that Part of the Bed where they rot, will be entirely spoil'd. After they once begin to produce, the Bed must be diligently search'd every Day, during their chief Season of Growth, which is commonly in *August* and *September*, but at other Times, every other Day, in order to gather all such as are fit for Use; in doing of which you should pull them gently out of the Ground, so that no Part of their Stems be left behind, which will engender Worms, whereby the young Spawn will be destroy'd; but if in pulling them up, there should any of the Spawn adhere to their Roots, that should be gently taken off, being careful not to bruise it, and thrust into the Bed again, where it will soon fix.

As the Cold increases in Autumn, so you should increase the Quantity of your Litter over the Beds, to preserve 'em from that and Wet, which if not guarded against, will soon retard the Growth of the *Mushrooms*, and spoil the Beds for a future Crop.

A Bed thus manag'd, if the Spawn takes kindly, will continue good for several Months, and produce great Quantities of *Mushrooms*; from these Beds you take the Spawn for a fresh Supply, which may be laid up in a dry Place until the proper Season of using it, which is towards the latter End of *July* or the Beginning of *August*, and it will be the better for the Purpose, if kept dry three or four Months, as I have experienced; nay, I have had it succeed extremely well, after having been kept in a warm dry Place above six Months.

MUSTARD; *vide* Sinapi.

MYOSOTIS: Mouse-ear Chick-weed.

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The Characters are;

It hath the whole Appearance of Chickweed; but the Flower is larger, and the Fruit is shap'd like an Ox's horn, gaping at the Top, and full of small round Seeds.

The Species are;

1. MYOSOTIS; *Hispanica, segetum*. Tourn. Spanish Corn Mouse-ear'd Chickweed.

2. MYOSOTIS; *Alpina, latifolia*. Tourn. Broad-leav'd Mouse-ear Chickweed of the Alps.

3. MYOSOTIS; *Orientalis, perfoliata, folio lychnidis*. Flor. Eastern Thorough-wax, Mouse-ear Chickweed, with a Campion Leaf.

There are several other Varieties of this Plant, which are preserved in curious Botanick Gardens; but as they are of little Beauty or Use, so I shall omit mentioning them in this Place. These may be propagated by sowing their Seeds in March, upon a Bed of light fresh Earth, in an open Situation, where they may remain to flower and seed, being careful to clear them from Weeds, as also to pull up the Plants where they come up too thick; but they do not succeed well if transplanted, so that they should always remain where they are sown.

MYRRHIS; Sweet Cicely.

The Characters are;

It is an umbeliferous Plant, with a Rose-shap'd Flower, consisting of several unequal Petals, or Flower Leaves, that are placed circularly, and rest upon the Empalement; which turns to a Fruit, compos'd of two Seeds, resembling a Bird's-bill, channel'd and gibbous on one Side, but plain on the other.

The Species are;

1. MYRRHIS; *magno semine, longo sulcato*. F. B. Sweet Cicely, or
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Great Sweet Chervil, and by some, Sweet Fern.

2. MYRRHIS; *annua, semine, striato, villoso, incano*. M. Umb. Annual Sweet Cicely, with hairy striated Seeds, by some call'd Candy Carrot.

3. MYRRHIS; *Orientalis, folio angustiori peucedani, semine villoso*. Boerb. Ind. Eastern Sweet Cicely, with a narrow Sulphur-wort Leaf and hairy Seeds, or the True Candy Carrot.

There are many more Sorts of this Plant preserved in the Gardens of such as are curious in Botany, but as they are Plants of little Use or Beauty, so I thought it not necessary to enumerate them in this Place.

The first mention'd is an abiding Plant, which is sometimes used in Medicine: This may be propagated by sowing the Seeds in February, upon a Bed of light, rich Earth, in a shady Situation; and when the Plants come up, they should be transplanted out into the like rich Earth, in a moist shady Situation, at about two Feet asunder, for they spread very wide, and take up much Room, (especially if they are permitted to remain two or three Years unremoved); after the Plants have taken Root they will require no farther Care, but to keep 'em clear from Weeds, and they will endure several Years, and produce great Quantities of Seeds. By which, as also by parting the old Roots, they may be greatly increas'd.

The Seeds of the second Sort are most commonly sold in the Shops for those of the *Daucus Creticus*; but it is the third Sort which is generally accounted the true *Daucus Creticus*: The Seeds of which are us'd in some of the capital Medicines of the Shops.

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These may be propagated by sowing their Seeds in the Spring upon a Border of light Earth, expos'd to the Morning-Sun, in which the Plants will rise in about six Weeks after; when they may be transplanted out into Beds of light Earth, observing to water and shade them until they have taken Root; after which they will require no farther Care but only to keep them clear from Weeds: The Summer following these Plants will produce Flowers and Seeds; soon after which, the second Sort will decay; but the third will sometimes abide two or three Years, and produce Seeds annually.

MYRTUS; The Myrtle.

The Characters are;

The Flower consists of several Leaves dispos'd in a circular Order, which expand in Form of a Rose; upon the Top of the Foot-stalk is the Ovary, which has a short Star-like Cup, divided at the Top into five Parts, and expanded; the Ovary becomes an oblong umbilicated Fruit, divided into three Cells, which are full of Kidney-shap'd Seeds.

The Species are;

1. MYRTUS; *communis, Italica*. C. B. P. Common Myrtle, with pretty large Leaves.

2. MYRTUS; *latifolia, Romana*. C. B. P. Common Broad-leav'd Myrtle.

3. MYRTUS; *minor, vulgaris*. C. B. P. Thyme-leav'd Myrtle; vulgō.

4. MYRTUS; *folio Buxi*. Schuyl. Boerb. Ind. Box-leav'd Myrtle; vulgō.

5. MYRTUS; *foliis minimis & mucronatis*. C. B. P. Rosemary-leav'd Myrtle; vulgō.

6. MYRTUS; *flore pleno*. Corn. Double-flowering Myrtle; vulgō.

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7. MYRTUS; *foliis odore Nucis Moschatae, cauliculis rubentibus*, vulgō *odore Citri*. Schuyl. Boerb. Ind. The Nutmeg Myrtle; vulgō.

8. MYRTUS; *Batica, angustifolia* Clus. Narrow-leav'd Spanish Myrtle, commonly call'd, The Upright Myrtle.

9. MYRTUS; *balsamica, foliis Mali Granatae*. H. L. The Pomegranate-leav'd Myrtle.

10. MYRTUS; *latifolia Batice secunda, vel foliis Laurinis confertim nascentibus*. C. B. P. The Orange-leav'd Myrtle; vulgō.

11. MYRTUS; *minor, foliis ex albo, variegatis*. The Strip'd Thyme-leav'd Myrtle.

12. MYRTUS; *foliis odore Nucis Moschatae, cauliculis rubentibus, foliis ex luteo variegatis*. The Strip'd Nutmeg Myrtle; vulgō.

13. MYRTUS; *foliis mucronatis, ex albo & viridi variegatis, flosculis rubra candidis*. Boerb. Ind. The Strip'd Thyme-leav'd Myrtle; vulgō.

14. MYRTUS; *latifolia, Romana, foliis ex luteo variegatis*. The Broad-leav'd Myrtle, with strip'd Leaves.

There are some other Varieties of these Plants which are preserv'd in the Gardens of the Curious, but those here mention'd are what I have observ'd in the Gardens near London.

These Plants may be all propagated from Cuttings; the best Season for which is in July, when you should make Choice of some of the straightest and most vigorous young Shoots, which should be about six or eight Inches long, and the Leaves on the Lower Part must be stripp'd off about two Inches long, and the Part twisted which is to be plac'd in the Ground: Then having fill'd a Parcel of Pots (in Proportion to the Quantity of Cuttings design'd)

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design'd) with light rich Earth, you should plant the Cuttings therein at about two Inches Distance from each other, observing to close the Earth fast about them, and give them some Water to settle it to the Cuttings; then place the Pots under a common Hot-bed Frame, plunging them either into some old Dung or Tanners-Bark, which will prevent the Earth from drying too fast; but you must carefully shade them with Mats in the Heat of the Day, and give them Air in Proportion to the Warmth of the Season, not forgetting to water them every two or three Days, as you shall find the Earth in the Pots require it: With this Management, in about a Month's Time, the Cuttings will be rooted, and begin to shoot; when you must inure 'em to the open Air by degrees, into which they should be remov'd towards the latter End of *August*, placing them in a Situation where they may be shelter'd from cold Winds, in which place they may remain till *October*; when the Pots should be remov'd into the Green-house, but should be plac'd in the coolest Part thereof, that they may have Air given to them whenever the Weather is mild, for they require only to be protected from severe Cold, except the *Orange-leav'd* and the strip'd *Nutmeg Myrtles*, which are somewhat tenderer than the rest, and should have a warmer Situation.

During the Winter-season they must be frequently water'd, and if any decay'd Leaves appear, they should be constantly pick'd off, as also the Pots kept clear from Weeds, which, if permitted to grow, will soon overspread the young Plants and destroy them.

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The *March* following these Plants should be taken out of the Pots very carefully, preserving a Ball of Earth to the Roots of each of them, and every one should be placed into a separate small Pot fill'd with rich light Earth, observing to water them well to settle the Earth to their Roots, and place them in the shady Part of the Green-house until they have taken Root, after which they should be inur'd to the Sun and Air; and in *May* they must be expos'd to the open Air, observing to place them near Hedges, where they may be defended from strong Winds.

During the Summer-season they will require to be plentifully water'd, especially being in such small Pots, which in that Season soon dries, therefore you should observe to place them where they may have only the Morning-Sun, for when they are too much expos'd to the Sun in the Heat of the Day, the Moisture contain'd in the Earth of those small Pots will soon be exhal'd, and the Plants greatly retarded in their Growth thereby.

In *August* following you should examine your Pots, to see if the Roots of the Plants have not made Way out through the Hole in the Bottom of the Pots; which if you observe, you must then shift them into Pots a Size bigger, filling them up with the like rich Earth, and observe to trim the Roots which were matted to the Side of the Pots, as also to loosen the Earth from the Outside of the Ball with your Hands, some of which should be taken off, that the Roots may the easier find Passage into the fresh Earth; then you must water them well, and place the Pots in a Situation where they may be defended

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from strong Winds: And at this time you may trim the Plants, in order to reduce them to a regular Figure; and if they are inclinable to make crooked Stems, you should thrust down a slender strait Stick close by them, to which their Stems should be fasten'd, so as to bring 'em upright.

If Care be taken to train them thus while they are young, the Stems afterwards, when they have acquired Strength, will continue strait without any Support, and their Branches may be prun'd, so as to form either Balls or Pyramids; which for such Plants as are preserv'd in the Green-house, and require to be kept in small Compass, is the best Method to have them handsome: But then these sheer'd Plants will not produce any Flowers; for which Reason that Sort with double Flowers should not be clipp'd, because the chief Beauty of that consists in its Flowers: But it will be necessary to suffer a Plant or two of each Kind to grow rude, for the Use of their Branches in Nofegays, &c. for it will greatly deface those which have been constantly sheer'd to cut off their Branches.

As these Plants advance in Stature, so they should annually be remov'd into larger Pots, according to the Size of their Roots, but you must be careful not to put them in Pots too large, which will cause them to shoot weak and straggling, and many times proves the Destruction of them; therefore when they are taken out of the former Pots, the Earth about their Roots should be pared off, and that withinside the Ball must be gently loosen'd, that the Roots may not be too closely confin'd; and then

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place them into the same Pots again, provided they are not too small, filling up the Sides and Bottom of them with fresh rich Earth, and giving them plenty of Water to settle the Earth to their Roots, which should be frequently repeated, for they require to be often water'd both in Winter and Summer; but in hot Weather they must have it in Plenty.

The best Season for shifting these Plants, is either in *April* or *August*, for if it be done much sooner in the Spring, the Plants are then in a slow growing State, and so not capable to strike out fresh Roots again very soon: And if it be done later in Autumn, the cold Weather coming on will prevent their taking Root; nor is it adviseable to do it in the great Heat of Summer, because they will require to be very often water'd, and also to be plac'd in the Shade, otherwise they will be liable to miscarry: And that being the Season when these Plants should be plac'd amongst other Exoticks to adorn the several Parts of the Garden, these Plants being then remov'd, could not be expos'd until they have taken Root again, which at that time (if the Season be hot and dry) will be three Weeks or a Month.

In *October*, when the Nights begin to have Frosts, you should remove the Plants into the Green-house; but if the Weather proves favourable in Autumn, (as it often happens) they may remain abroad until the Beginning of *November*; for if they are carry'd into the Green-house too soon, and the Autumn should prove warm, they will make fresh Shoots at that Season, which will be weak, and often decay in Winter, if the Weather should

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should be severe, whereby they will be greatly defac'd; for which Reason they should always be kept as long abroad as the Season will permit, and remov'd out again in the Spring before they shoot out; and during the Winter-season that they are in the Green-house, they should have as much free Air as possible when the Weather is mild.

The two first mention'd Sorts I have seen planted abroad in warm Situations, and upon a dry Soil, where they have endured the Cold of Winters for several Years very well, with only being cover'd in very hard Frosts with two or three Mats, and the Surface of the Ground about their Roots cover'd with a little Mulch to prevent the Frost from entering the Ground: But in *Cornwall* and *Devonshire*, where the Winters are more favourable than in most other Parts of *England*, there are large Hedges of *Myrtle* which have been planted several Years, and are very thriving and vigorous, some of which are upward of six Feet high; and I believe if the Double-flowering Kind were planted abroad, it would endure the Cold as well as any of the other Sorts, it being a Native of the Southern Parts of *France*. This and the *Orange-leav'd* Kind, are the most difficult to take Root from Cuttings; but if they are planted toward the latter end of *July*, making Choice of only such Shoots as are tender, and the Pots be plung'd into an old Bed of *Tanners Bark* which has lost most of its Heat, and the Glasses shaded every Day, they will take Root extremely well, as I have more than once experienc'd. The *Orange-leav'd* Sort, and those with variegated Leaves are somewhat tenderer than the ordinary Sorts,

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and should be hous'd a little sooner in *Autumn*, and plac'd farther from the Windows of the Green-house.

MYRTUS BRABANTICA; *vide* Gale.



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NAPELLUS; *vide* Aconitum.
NAPUS; The Navew or French Turnip.

The Characters are;

It agrees in most respects with the Turnip, but hath a lesser Root, and somewhat warmer to the Taste.

The Species are;

1. NAPUS; *sativa, radice alba*.
C. B. P. Garden Navew, with a white Root.

2. NAPUS; *sativa, radice nigra*.
C. B. P. Garden Navew, with a black Root.

3. NAPUS; *sylvestris*. C. B. P. Wild Navew.

The two first Species of this Plant are cultivated in *France*, *Italy*, and *Germany*, in great Abundance; in which Places they are much prefer'd to common Turnips, being accounted a more delicious Food; but in *England* they have not yet so much obtain'd, being only cultivated by some curious Persons, and are but rarely brought to the Markets.

These Plants may be cultivated by sowing their Seeds in *June*, *July*, and *August*, after the same manner as is practis'd for common Turnips; and when the Plants are come up, they should be hoed in the like manner to destroy the Weeds, and cut up the Plants where they come up too thick, with this Dif-

ference only, viz. that these may be left closer together than common Turnips, for neither their Leaves nor Roots do grow near so large: The Plants being thus clear'd from Weeds, and cut up where they are too thick, will require no farther Care until they are fit for Use, which (if the Season proves favourable) will be in about two Months after they are sown, when they must be drawn up, and treated as common Turnips. The wild Sort is pretty common upon dry Banks in most Parts of England, where it flowers early in the Spring, but is never cultivated in Gardens; but in the Isle of Ely it is very much cultivated, it being the Cole Seed from which they draw an Oyl: The Seeds of this Kind are us'd in Medicine, and by most preferr'd to those of the Garden Sort.

NARCISSO-LEUCOJUM; The Snow-drop; *vulgô*.

The Characters are;

The Flower is for the most part compos'd of six Leaves in form of a Lily, which are sometimes equal, and sometimes unequal and pendulous: The Empalement becomes a roundish Fruit, which is divided into three Cells, and full of roundish Seeds: To which may be added, It hath a bulbous Root.

The Species are;

1. NARCISSO-LEUCOJUM; *trifolium, minus*. Tourn. Lesser Bulbous-violet or Snow-drop.

2. NARCISSO-LEUCOJUM; *vulgaris*. Tourn. Common Bulbous-violet or Snow-drop.

3. NARCISSO-LEUCOJUM; *trifolium, minus, flore pleno*. Boerb. Ind. The Double Snow-drop.

4. NARCISSO-LEUCOJUM; *trifolium, majus*. Tourn. Greater Snow-drop or Bulbous-violet.

5. NARCISSO-LEUCOJUM; *altissimum, flore parvo albo, apicibus viridibus*. Boerb. Ind. The tallest Snow-drop, with small white Flowers tipp'd with Green.

The first of these Plants is very common in most English Gardens, where it is preserv'd for its early flowering, which is generally in January, when they often appear, though the Ground at that time be cover'd with Snow, and is one of the first Ushers in of the Spring.

This Plant is very easily propagated from Off-sets, which the Roots send forth in great Plenty (especially if they are permitted to remain undisturb'd for two or three Years) in which time, from a single Bulb, there will often be ten or twelve flowering Roots, and as many more small Off-sets.

The best Season for transplanting the Roots is in May, after their Leaves are decay'd, when they must be taken up; and after being dry'd in a shady Place, they may be kept out of the Ground until September before they need be planted again; when they should be planted about two Inches deep, and pretty close together, otherwise their Flowers being small, will make but a poor Appearance.

They will thrive in almost any Soil or Situation, but are commonly planted near Hedges, and by the Sides of large Walks; where being permitted to remain two or three Years unremov'd, till they have increas'd, and become large Bunches, they make a very good Appearance before any other Flowers come up.

The Double Sort is preferr'd to the Single, for the Largeness and Fairness of its double Flowers. This may be propagated as the last;

last, but does not multiply quite so fast, nor do the Flowers appear so soon in the Spring, but they are of longer Duration.

The Great *Snow-drop* is pretty rare in *England*, and only to be found in some curious Gardens. This produces much larger Flowers than the common Sort, and generally rises eight or ten Inches high. It flowers toward the latter-end of *February* or the Beginning of *March*, and continues a long time in Beauty. This is also propagated by Off-sets as the former, but does not increase very fast: It requires a middling Soil which is fresh, but seldom thrives well in very rich Ground, and should be planted to an *East* or *South-East* Aspect, where it may have the Morning-Sun; in which Situation it will thrive better than if expos'd to a greater Heat.

The tallest *Snow-drop* is a very hardy Plant, and increases pretty fast by Off-sets, so that it is much commoner than the last. This flowers in *April* and *May*, and generally rises two Feet high. The Bulbs of this Kind are very large, and do greatly resemble those of the *Narcissus*, and the Leaves are very broad, but the Flowers are small, and seldom more than two or three produc'd upon each Stalk. These make a pretty Variety when intermix'd with other bulbous rooted Flowers.

All these Sorts may be transplanted when their Leaves are decay'd, before they strike out fresh Fibres, after which it will be too late to remove them: Their Roots may be kept out of the Ground two or three Months, if preserv'd in a dry Place, and may be planted in almost any Soil, but they thrive best in a fresh light sandy Earth.

NARCISSUS; The Daffodil.

The Characters are;

It hath a Lily Flower, consisting of one Leaf, which is Bell-shap'd, and cut into six Segments, which incircle its Middle like a Crown; but the Empalement, which commonly rises out of a membranous Vagina, turns to an oblong or roundish Fruit, which is triangular; and gapes in three Parts, is divided into three Cells, and full of roundish Seeds.

The Species are;

1. NARCISSUS; *sylvestris, pallidus, calyce luteo*. C. B. P. Wild English Daffodil.

2. NARCISSUS; *medio-luteus, vulgaris*. Park. Common Pale Daffodil, or Primrose Peerless.

3. NARCISSUS; *major, totus, luteus, calice pralongo*. C. B. P. Great Yellow Spanish Daffodil, with a long Cup.

4. NARCISSUS; *latifolius, omnium maximus, amplo calice, flavo, sine Nonpareille*. Park. Par. The Great Nonpareil or Nonsuch Daffodil.

5. NARCISSUS; *parvus, totus luteus*. C. B. P. Small Yellow Spanish Daffodil.

6. NARCISSUS; *luteus, florum petalis reflexis*. C. B. P. Yellow Daffodil, with the Leaves of its Flowers turning back.

7. NARCISSUS; *multiplex, totus flavus*. C. B. P. Common Yellow Daffodil, with a double Flower.

8. NARCISSUS; *incomparabilis, flore pleno, partim flavo, partim croceo*. H. R. Par. The incomparable Double Daffodil, with the Flower-leaves partly yellow, and partly of a Saffron Colour.

9. NARCISSUS; *latifolius, flore plenissimo, petalis majoribus candidis, minoribus aureis interpolatis*. Boerh. Ind. Nonsuch Daffodil, with a very double Flower, whose larger Leaves are white, but the lesser

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Leaves (which are intermix'd) of a Gold Colour.

10. NARCISSUS; *latifolius, flore plenissimo, petalis majoribus pallidis, minoribus flavis interpolatis.* Boerb. Ind. Nonsuch Daffodil, with a very double Flower, whose larger Leaves are of a pale Colour, which are intermix'd with smaller Leaves of a yellow Colour.

11. NARCISSUS; *latifolius, flore plenissimo, petalis partim flavis, partim viridibus interpolatis.* Broad-leav'd Daffodil, with a very double Flower, whose Leaves are some yellow, and others green, intermix'd, commonly call'd Tradescant's Daffodil.

12. NARCISSUS; *Anglicus, flore pleno.* The Double English Daffodil.

13. NARCISSUS; *latifolius, sulphureus vel albus, brevi calice.* C. B. P. Broad-leav'd Daffodil, with a Brimstone-colour'd Flower, having a short Cup.

14. NARCISSUS; *latifolius, sulphureus, calicis brevis, aurei, ora embriata.* Boerb. Ind. Alt. Broad-leav'd Brimstone-colour'd Daffodil, with a short Gold-colour'd Cup fring'd about the Edge.

15. NARCISSUS; *Illyricus, Liliaceus.* C. B. P. The Sea Daffodil, or Narcissus tertius Matthioli.

16. NARCISSUS; *maximus, pallidus, foliis incanis.* C. B. P. Greater Pale-colour'd Daffodil.

17. NARCISSUS; *albus multiplex.* Park. Par. The Double white Daffodil, or Narcissus.

18. NARCISSUS; *albus, circulo croceo.* C. B. P. The White Daffodil, with the Rim of the Cup of a Saffron Colour.

19. NARCISSUS; *Narbonensis, sive medio luteus, serotinus major.* Park. Par. The Great late flowering French Daffodil.

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20. NARCISSUS; *Orientalis, albus, calice luteo campanula similis maximus.* C. B. P. The Bosselman's Narcissus; vulgò.

21. NARCISSUS; *Orientalis, albus, calice luteo, medius.* C. B. P. Oriental White Daffodil, with a yellow Cup.

22. NARCISSUS; *luteus, polyanthos, Lusitanicus.* C. B. P. Yellow Portugal Daffodil, with many Flowers.

23. NARCISSUS; *Orientalis, albus, minor, calice sulphureo pallido amplo.* Boerb. Ind. Lesser white Oriental many-flower'd Daffodil, with an ample pale Brimstone-colour'd Cup.

24. NARCISSUS; *pallidus, medio aureus.* C. B. P. Pale Daffodil, with a Golden Cup, commonly call'd Le Soleil D'Or.

25. NARCISSUS; *Orientalis, albus, calice luteo, minor.* C. B. P. Lesser White Oriental Daffodil, with a yellow Cup.

26. NARCISSUS; *Orientalis, albus, calice stellato.* C. B. P. Oriental White Daffodil, with a starry Cup.

27. NARCISSUS; *Orientalis, lacteus, maximus, calice pallido amplo.* Boerb. Ind. Largest Oriental White Daffodil, with an ample pale Cup, commonly call'd, The Czar of Mulcovy.

28. NARCISSUS; *Orientalis, maximus, lacteus, calice pallido parvo.* Boerb. Ind. Greatest White Oriental Narcissus, with a small pale-colour'd Cup.

29. NARCISSUS; *Orientalis, major, polyanthos, totus albus.* H. Eyst. Great Oriental Narcissus, with many white Flowers upon a Stalk.

30. NARCISSUS; *Orientalis, medius, polyanthos, totus albus.* H. Eyst. Middle Oriental Narcissus, with many white Flowers upon a Stalk.

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31. NARCISSUS; *Orientalis, minor, polyanthos, totus albus*. H. Eyst. Lesser Oriental Narcissus, with many white Flowers upon a Stalk.

32. NARCISSUS; *Funcifolius, oblongo calice, luteus, major*. C. B. P. Single Yellow Jonquil, with a large oblong Cup.

33. NARCISSUS; *Funcifolius, luteus minor*. C. B. P. Lesser single Yellow Jonquil.

34. NARCISSUS; *Funcifolius, flore pleno*. Clus. Cur. Post. Double Yellow Jonquil.

35. NARCISSUS; *Funcifolius, petalis angustissimis, calice maximo tubam referente*. Boerh. Ind. Rush-leaf'd Daffodil, with very narrow Petals, and a large tubulous Cup, commonly call'd, the Hoop-Petticoat.

36. NARCISSUS; *Funcifolius flore pallidiore, calice flavo*. C. B. P. Rush-leaf'd Daffodil, with a paler Flower, and a yellow Cup.

There are several other Varieties of these Flowers, which are annually brought over from *Holland* and *Flanders*, where the Gardeners are very industrious in raising these and most other Bulbous-rooted Flowers from Seeds, whereby they continually procure some new Varieties, which recompences them for their Trouble and Expence. But in *England* there are very few Persons who have Patience to propagate any of these Flowers that Way, it being commonly five Years before they can expect to see the Fruits of their Labour: however, after the first five Years are past, if there be Seeds sown every Year, there will be annually a Succession of Flowers to shew themselves; so that there will be a continual Expectation, which will take off the Tedioufness which during the first five Years, might

be very troublesome to some Persons; and the annual Production of new Flowers corresponding to the annual Sowing, it will be as if the Product arose soon after.

The not practising this Method, has occasion'd our sending Abroad annually for great Quantities of Flower-Roots, which have been kept up to a great Price, on account of the great Demand for 'em in *England*; whereas if we were as industrious to propagate them as our Neighbours, we might soon vie with them, if not out-do 'em, in most Sorts of Flowers; as may be easily seen, by the vast Variety of *Carnations*, *Auricula's*, *Ranuncula's*, &c. which are what have been produc'd from Seeds in *England*, and do exceed every thing of those Kinds in any Part of *Europe*.

I shall therefore first lay down the Method of propagating these Flowers from Seeds; and afterwards proceed to the necessary Directions for increasing them from Off-sets; with the manner of treating the Roots, to produce strong Flowers.

You must be very careful, in saving your Seed's, to gather none but from such Flowers as have good Properties, and particularly from such only as have many Flowers upon a Stalk, that flower tall, and have beautiful Cups to their Flowers; from such you may expect to have good Flowers produc'd: But if you sow ordinary Seed, it is only putting your self to Trouble and Expence to no Purpose; since from such Seeds there can be no Hopes of procuring any valuable Flowers.

Having provided your self with good Seeds, you must procure either some shallow Cases or flat
Pans

Pans made on purpose for the raising of Seedlings, which should have Holes in their Bottoms to let the Moisture pass off; these must be fill'd with fresh light sandy Earth about the Beginning of *August* (this being the best Season for sowing the Seeds of most Bulbous-rooted Flowers) which must be levell'd very even; then sow the Seeds thereon pretty thick, covering 'em over with fine sifted light Earth about half an Inch thick, and place the Cases or Pans in a Situation where they may have only the Morning Sun 'till about Ten o'Clock, where they should remain until the Beginning of *October*, when they must be removed into a warmer Situation, placing 'em upon Bricks, that the Air may freely pass under the Cases, which will preserve them from being too moist.

They should also be expos'd to the full Sun, but screen'd from the cold *North* and *East* Winds, where they may remain until the Beginning of *April*, by which time the Plants will be up, when you must carefully clear 'em from Weeds; and if the Season should prove dry, they must be frequently water'd: The Cases should also now be remov'd into their former shady Position; for the Heat of the Noon-day Sun will be too great for the young Plants.

The latter-end of *June*, when the Leaves of the Plants are decay'd, you should take off the upper Surface of the Earth in the Cases (which by that time will have contracted a Mossiness, and, if suffer'd to remain, will greatly injure the young Roots) observing not to take it so deep as to touch the Roots; then sift some fresh light Earth over the Surface about half

an Inch thick, which will greatly strengthen the Roots: The same should also be repeated in *October*, when the Cases are mov'd into the Sun.

During the Summer-season, if the Weather should prove very wet, and the Earth in the Cases appear very moist, you must remove 'em into the Sun 'till the Earth be dry again; for if the Roots receive much Wet during the time they are unactive, it very often rots them; therefore you must never give 'em any Water after their Leaves are decay'd, but only place 'em in the Shade (as was before directed.)

Thus you should manage them the two first Seasons, 'till their Leaves are decay'd the second Summer after sowing, when you should carefully take up the Roots; which may be done by lifting the Earth in the Cases with a fine Sieve, whereby the Roots will be easily separated from the Earth; then having prepared a Bed or two of good fresh light Earth, in proportion to the Quantity of your Roots, you should plant 'em therein at about three Inches Distance every Way, and about three Inches deep in the Ground.

These Beds should be rais'd above the Level of the Ground, in proportion to the Moisture of the Soil, which, if dry, three Inches will be enough; but if it be wet, they must be rais'd six or eight Inches high, and laid a little rounding to shoot off the Wet.

If these Beds are made in *July*, which is the best time to transplant the Roots, the Weeds will soon after appear very thick; therefore you should gently hoe the Surface of the Ground, to destroy 'em; being very careful not to cut

so deep as to touch any of the Roots; and this should be repeated as often as may be found necessary by the Growth of the Weeds, observing always to do it in dry Weather, that they may be effectually destroy'd: And toward the latter-end of *October*, after having intirely clear'd the Beds from Weeds, you should sift a little rich light Earth over them about an Inch thick, the Goodness of which will be wash'd down to the Roots by the Winter's Rain, which will greatly encourage their Shooting in the Spring.

If the Cold should be very severe in Winter, you should cover the Beds with Pease-haulm, or some such light Covering, to prevent the Frost from penetrating the Ground to the Roots, which might greatly injure them while they are so young.

In the Spring, when the Plants begin to appear above-ground, you must gently stir the Surface of the Ground, clearing it from Weeds, &c. in doing of which, you should be very careful not to injure the Plants: And if the Season should prove dry, you should now-and-then gently refresh 'em with Water, which will strengthen the Roots.

When their Leaves are decay'd, you should clear the Beds from Weeds, and sift a little Earth over 'em (as was before directed;) which must also be repeated in *October*, in like manner; and so every Year continu'd 'till the Roots flower, when you should mark all such as promise well, which should be taken up as soon as their Leaves decay, and planted at a greater Distance in new-prepared Beds: But those which do not flower, or those you do not greatly esteem,

should be permitted to remain in the same Bed; therefore, in taking up those Roots which you mark'd, you must be careful not to disturb the Roots of those left, and also to level the Earth again, and sift some fresh Earth over the Beds (as before) to encourage the Roots; for it often happens, in the Seedlings of these Flowers, that at their first time of Blowing, their Flowers do seldom appear half so beautiful as they do the second or third Year; for which Reason none of them should be rejected until they have flower'd two or three times, that so you may be assured of their Worth.

Thus having laid down Directions for the Sowing and Managing these Roots, until they are strong enough to flower; I shall proceed to give some Instructions for Planting and Managing the Roots afterwards, so as to cause 'em to produce large fair Flowers.

All the Sorts of *Narcissus* which produce many Flowers upon a Stalk, should have a Situation defended from Winds, otherwise they'll be subject to be broke down when in Flower; for notwithstanding their Stalks are generally pretty strong, yet the Number of Flowers upon each, renders their Heads weighty, especially after Rain, which lodges in the Flowers, and, if succeeded by strong Winds, very often destroys their Beauty, if they are expos'd thereto; so that a Border under a Hedge, which is open to the South-East, is preferable to any other Position for these Flowers.

The Morning Sun rising upon them will dry off the Moisture which had lodged upon them the preceding Night, and cause 'em to expand fairer than when they are planted

planted in a shady Situation; and if they are too much expos'd to the Afternoon Sun, they will be hurry'd out of their Beauty very soon; and the strong Winds usually coming from the *West* and *South-West* Points, they will be expos'd to the Fury of them, which frequently is very injurious to them. But you should not plant them under a Wall, or any other close Fence; for that will reflect the Heat too greatly upon the Flowers, and also draw them up with weak Stems, so that they will not flower so strong, nor continue so long in Beauty.

Having made choice of a proper Situation, you must then proceed to prepare the Earth necessary to plant them in; for if the natural Soil of the Place be very strong, or poor, it will be proper to make the Border of new Earth, removing the former Soil away about a Foot deep. The best Earth for these Flowers is a fresh light hazle Loam, mix'd up with a little very rotten Dung, or Tan; this should be well mix'd together, and often turn'd over, in order to sweeten it: Then having remov'd away the old Earth at least a Foot deep, you should put a Laying of rotten Dung or Tan in the Bottom about two Inches thick, upon which you must lay some of the prepared Earth about four Inches thick, making it exactly level; then having mark'd out by Line the exact Distances which the Roots are to be planted (which should not be less than four or five Inches square) you must place the Roots accordingly, observing to set them upright; then you must cover them over with the before-mention'd Earth about six Inches deep, being very careful, in doing

of it, not to displace the Roots: When this is done, you must rake the Surface of the Border even, and make up the Side strait, which will appear handsome.

The best Time for planting these Roots is in *August*; for if they are kept too long out of the Ground, it will cause their Flowers to be very weak. You should also observe the Nature of the Soil where they are planted, and, whether the Situation be wet or dry, according to which you should adapt the fresh Earth, and order the Beds; for if the Soil be very strong, and the Situation moist, you should then make choice of a light Earth, and raise the Beds six or eight Inches above the Level of the Ground, otherwise the Roots will be in danger of perishing by too much Wet: But if the Situation be dry, and the Soil naturally light, you should then allow the Earth to be a little stronger: And the Beds should not be rais'd above three Inches high; for if they are made too high, the Roots will suffer very much, if the Spring should prove dry, nor would the Flowers be near so fair.

Toward the Middle of *October*, if the Weeds have grown upon the Beds, you should, in a dry Day, gently hoe the Surface of the Ground, to destroy them, observing to rake it over smooth again: After which, they will require no farther Care till the Spring, when their Leaves will appear above-ground, at which Time you should gently stir the Surface of the Earth, with a small Trowel, being very careful not to injure the Leaves of the Plants, and rake it smooth with your Hands, clearing off all Weeds, &c. which, if suffer'd to remain at that Season, will soon

grow

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grow so fast, as to appear very un-
lively, and will exhaust the Nour-
ishment from the Earth. With
this Management these Roots will
flower very strong, some of which
will appear in *March*, and the o-
thers in *April*; which, if suffer'd
to remain, will continue in Beauty
a full Month, and are at that Sea-
son very great Ornaments to a
Flower-Garden.

After the Flowers are past, and
the Leaves decay'd, you should stir
the Surface of the Ground, to pre-
vent the Weeds from growing;
and if at the same time you lay a
little very rotten Dung over the
Surface of the Beds, the Rain will
wash down the Salts thereof, which
will greatly encourage the Roots
the succeeding Year.

During the Summer-season they
will require no farther Care, but
to keep them clear from Weeds
'till *October*, when the Surface of
the Beds should be again stirr'd, ra-
king off all Weeds, &c. and laying
some good fresh Earth over the
Beds about an Inch deep, which
will make good the Loss sustain'd
by Weeding, &c. and in the Spring
you must manage as was before di-
rected for the preceding Year.

These Roots should not be trans-
planted oftener than every third
Year; because the first Year after
removing they never flower so
strong as they do the second and
third; nor will the Roots increase
so fast when they are often trans-
planted; but if you let them re-
main longer than three Years unre-
mov'd, the Number of Off-sets,
which by that Time will be pro-
duced, will weaken the large Bulbs,
and cause them to produce very
weak Flowers; therefore, at the
time of transplanting them, all the
small Off-sets should be taken off,

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and planted in a Nursery-bed by
themselves, but the large Bulbs
may be planted again for Flower-
ing. If you plant them in the
same Bed where they grew before,
you must take out all the Earth a
Foot deep, and fill it up again with
fresh, in the manner before direct-
ed, which will be equal to remo-
ving them into another Place:
This is the constant Practice of the
Gardeners in *Holland*, who have
but little Room to change their
Roots; therefore they every Year
remove the Earth of their Beds,
and put in fresh, so that the same
Place is constantly occupy'd by the
like Flowers.

The common Sorts of *Daffodil*
are generally planted in large Bor-
ders of the Pleasure-Garden, where
being intermix'd with other Bul-
bous-rooted Flowers, do afford an
agreeable Variety in their Seasons
of Flowering: These Roots are ve-
ry hardy, and will thrive in almost
any Soil or Situation, which ren-
ders 'em very proper for Rural
Gardens, where being planted un-
der the Shade of Trees, they will
endure several Years without trans-
planting and produce annually, in
the Spring, great Quantities of
Flowers, which afford an agreeable
Prospect.

The *Jonquils* should be planted
in Beds, or Borders, separate from
other Roots; because these require
to be transplanted at least every
other Year, otherwise their Roots
are apt to grow long and slender,
and seldom flower well after;
which is also the Case, if they are
continued many Years in the same
Soil; wherefore the Roots should
be often remov'd from one Part of
the Garden to another, or at least
the Earth should be often renew'd,
which is the most probable Me-
thod

thod to preserve these Flowers in Perfection.

The Soil in which these Flowers succeed best, is a Hazle Loam, neither too light, nor over-stiff; it must be fresh, and free from Roots of Trees, or noxious Weeds; but should not be dung'd; for 'tis very remarkable, that where the Ground is made rich, they seldom continue good very long, but are subject to shoot downwards, and form long slender Roots.

These Flowers are very greatly esteem'd by many People for their strong sweet Scent, tho' there be very few Ladies that can bear the Smell of them; so powerful is it, that, many times, it overcomes their Spirits, especially if confined in a Room; for which Reason they should never be planted too close to an Habitation, lest they become offensive; nor should the Flowers be placed in such Rooms where Company is entertain'd.

NASTURTIIUM; Cress.

The Characters are;

The Flower consists of four Leaves, which are placed in Form of a Cross: The Pointal, which arises from the Centre of the Flower-cup, becomes a roundish smooth Fruit, which is divided into two Cells, by the intermediate Partition, obliquely placed, with respect to the Valves, and furnish'd with Seeds, which are generally smooth: To which may be added, The Leaves are cut into many Parts, by which Cress is distinguish'd from Thlaspi, or Treacle-Mustard.

The Species are;

1. NASTURTIIUM; *hortense, vulgatum*. C. B. P. Common Garden-Cress.

2. NASTURTIIUM; *hortense, crispum*. C. B. P. Curl'd Garden-Cress.

3. NASTURTIIUM; *hortense, latifolium*. C. B. P. Broad-leav'd Garden-Cress.

4. NASTURTIIUM; *sylvestre, capsulis cristatis*. Tourn. Swine's-Cress, or Warted Bucks-horn.

The first Sort is commonly cultivated in Gardens as a Sallet-herb, and is chiefly esteem'd in the Winter and Spring, it being one of the warm Kind. During the *Winter* Season, it must be sown upon a gentle Hot-bed, and cover'd with either Mats or Glasses, to preserve it from great Rains or Frost, both of which are equally destructive at that Season: In the *Spring* it may be sown in warm Borders, where, if it be defended from cold Winds, it will thrive very well: But if you would continue it in Summer, you must sow it upon shady Borders, and repeat sowing every Week, otherwise it will be too large for Use; for at that Season it grows very fast.

The *Broad-leav'd* and *Curl'd* Sorts are preserv'd in some Gardens for Curiosity Sake, and to garnish Dishes, but the common Sort is equally as good for Use. These should be sown somewhat thinner than the common Sort, and when the Plants come up, they should be drawn out, so as to leave the remaining ones half an Inch asunder, whereby they will have Room to expand their Leaves, in which their Difference from the common Sort consists.

In order to preserve these Varieties distinct, you must carefully separate all such Plants as appear inclin'd to degenerate from their Kinds, leaving only such of the broad-leav'd Kind as have very fair broad Leaves; and so of the curl'd Sort, only such as have their Leaves very much curl'd; being very careful

ful not to intermix 'em together. When the Seeds are ripe, the Plants should be drawn up, and spread upon a Cloth two or three Days to dry, after which the Seeds should be beaten out, and preserved in a dry Place for Use.

NASTURTIIUM INDICUM; *vide* Acriviola.

NECTARINE; Nectarine.

This Fruit should have been placed under the Article of *Peaches*, to which it properly belongs, differing from them in nothing more than in having a smooth Rind, and the Flesh being firmer. These the *French* distinguish by the Name of *Brugnon*, as they do those *Peaches* which adhere to the Stone, by the Name of *Pavie's*, retaining the Name of *Pesche* to only such as part from the Stone: But since the Writers in Gardening have distinguish'd this Fruit by the Name of *Nectarine* from the *Peaches*, so I shall follow their Example, lest by endeavouring to rectify their Mistakes, I should render my self less intelligible to the Reader. I shall therefore mention the several Sorts of this Fruit which have come to my Knowledge:

1. *Fairchild's Early Nectarine*. This is one of the earliest ripe *Nectarines* we have: It is a small round Fruit, about the Size of the *Nutmeg Peach*, of a beautiful red Colour, and well flavour'd; it ripens the Middle of *July*.

2. *Elruge Nectarine* is a middle-siz'd Fruit of a dark-red or purple Colour next the Sun, but of a pale yellow or greenish Colour towards the Wall; it parts from the Stone, and has a soft melting Juice. This ripens in the End of *July*.

3. *Newington Nectarine* is a fair large Fruit (when planted on a good Soil) of a beautiful red Co-

lour next the Sun, but of a bright Yellow towards the Wall; it has an excellent rich Juice, the Pulp adheres closely to the Stone, where it is of a deep red Colour. This ripens the Beginning of *August*.

4. *Scarlet Nectarine* is somewhat less than the last, of a fine red or scarlet Colour next the Sun, but loses it self in paler red towards the Wall. This ripens in the End of *July*.

5. *Brugnon or Italian Nectarine* is a fair large Fruit, of a deep red Colour next the Sun, but of a soft yellow toward the Wall; the Pulp is firm, of a rich Flavour, and closely adheres to the Stone, where it is very red. This ripens in the Middle of *August*.

6. *Roman Red Nectarine* is a large fair Fruit, of a deep red or purple Colour towards the Sun, but has a yellowish Cast next the Wall; the Flesh is firm, of an excellent Flavour, closely adhering to the Stone, where it is very red. This ripens the Middle of *August*.

7. *Murry Nectarine* is a middle-siz'd Fruit, of a dirty red Colour on the Side next the Sun, but of a yellowish green towards the Wall; the Pulp is tolerably well flavour'd. This ripens the Middle of *August*.

8. *Golden Nectarine* is a fair handsome Fruit, of a soft red Colour next the Sun, but of a bright yellow next the Wall; the Pulp is very yellow, of a rich Flavour, and closely adheres to the Stone, where it is of a faint red Colour. This ripens the Beginning of *September*.

9. *Temple's Nectarine* is a middle-siz'd Fruit, of a soft red Colour next the Sun, but of a yellowish Green towards the Wall; the Pulp is melting, of a white Colour towards

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wards the Stone, from which it parts, and has a fine poignant Flavour. This ripens in the Middle of September.

10. *Peterborough* or *late Green Nectarine* is a middle-siz'd Fruit, of a pale green Colour on the Outside next the Sun, but of a whitish Green towards the Wall; the Flesh is firm, and, in a good Season, well flavour'd. This ripens at the End of September.

There are some Persons who have mention'd more Sorts than I have here set down, but I much doubt whether they are different from those here mention'd, there being so near Resemblance between the Fruits of this Kind, that it requires a very close Attention to distinguish them well, especially if the Trees grow in different Soils and Aspects, which many times alters the same Fruit so much as hardly to be distinguish'd by Persons who are very conversant with them; therefore in order to be thoroughly acquainted with their Differences, it is necessary to consider the Shape and Size of their Leaves, the Size of their Flowers, their Manner of Shooting, &c. which is many times very helpful in knowing of these Fruits.

The Culture of this Fruit differing in nothing from that of the *Peach*, I shall forbear mentioning any thing on that Head in this Place, to avoid Repetition, but refer the Reader to the Article *Persica*, where there is an ample Account of their *Planting*, *Pruning*, &c.

NEPETA; vide *Cataria*.

NERIUM: The *Oleander*, or *Rosebay*.

The *Characters* are;

The *Flowers* are *monopetalous* and *Funnel-shap'd*, divided into five Segments at the Top; out of the Flower-cup arises the Pointal, which becomes

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a taper Fruit, or Pod, divided into two Cells by an intermediate Partition, and filled with flat Seeds which have Down adhering to them.

The *Species* are;

1. NERIUM; *floribus rubescentibus*. C. B. P. *Oleander*, with red Flowers.

2. NERIUM; *floribus albis*. C. B. P. *Oleander*, with white Flowers.

3. NERIUM; *Indicum angustifolium, floribus odoratis simplicibus*. H. L. *Narrow-leav'd Indian Oleander*, with single sweet-scented Flowers.

4. NERIUM; *Indicum latifolium, floribus odoratis plenis*. H. L. *Broad-leav'd Indian Oleander*, with double sweet-scented Flowers.

5. NERIUM; *Indicum flore variegato odorato pleno*. H. Amst. *Indian Oleander*, with double sweet-scented variegated Flowers, commonly call'd, *South-Sea Rose*.

The first and second Sorts are very common in the *English Gardens*, where they are preserv'd in Pots or Tubs, and placed amongst *Myrtles*, *Oranges*, &c. in the *Green-house*. They are pretty hardy Plants, and only require to be sheltered from hard Frost, for in moderate Winters I have known them stand abroad in warm Borders, but in hard Frosts they are often destroy'd if expos'd thereto.

These may be placed, in Winter, in an ordinary *Green-house* among *Bays*, &c. which require a great Share of free Air, and only want Protection from hard Frosts, where they will thrive better than if placed in a warmer House, or kept too close in Winter. They are propagated from Suckers, which they send forth from their Roots in great Plenty, or by laying down their tender Branches, which will take Root

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Root in one Year: The Time for laying them down, is in the Beginning of *April*, and the Year following, the Layers should be taken off, and planted into Pots filled with fresh rich Earth, observing to place 'em in the Shade until they have taken Root, after which they may be expos'd with *Myrtles*, *Geraniums*, &c. in some Place where they may be shelter'd from strong Winds. During the Summer Season they must be plentifully water'd, otherwise they will make but poor Progress, and produce very few Flowers, but if they are constantly supplied with Water, they will make a fine Appearance during the Months of *July* and *August*, when they will be covered with Flowers. In Winter they must be frequently refresh'd with Water, but it should not be given them in large Quantities at that Season.

The third, fourth, and fifth Sorts are tenderer than the others, therefore require a warmer Situation in Winter, nor must they be expos'd to the open Air in Summer, for if they are placed abroad, their Flowers will not open. So that in Winter they should be placed in a warm Green-house, and in Summer they should be remov'd into an airy Glass-Case, where they may be defended from the Cold of the Nights, but in Day-time they should have store of free Air, observing to give 'em plenty of Water, which will cause them to produce their Flowers large and in great Quantities. These Plants are Natives of the *Spanish West-Indies*, from whence they were brought into the *English Colonies in America*, where they were planted for the Beauty of their Flowers, but since the Inhabitants have found it destroy their Cattle which have brows'd on the Plants, they usually

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destroy them near their Settlements.

These Plants may be propagated from Suckers or Layers as the two former, but they do not produce Suckers in so great Plenty as those in this Country. They all grow naturally on the Sides of Rivers and moist Places, so that they must have plenty of Water.

NICOTIANA; Tobacco.

The Characters are;

The Flower consists of one Leaf, is funnel-shap'd, and divided at the Top into five deep Segments, which expand like a Star; the Ovary becomes an oblong or roundish membranaceous Fruit, which is divided into two Cells by an intermediate Partition, and is fill'd with small roundish Seeds.

The Species are;

1. *NICOTIANA; major, latifolia.* C. B. P. The greater broad-leav'd Tobacco.

2. *NICOTIANA; major, angustifolia.* C. B. P. The greater narrow-leav'd Tobacco.

3. *NICOTIANA; major, angustifolia, perennis.* *Jessieu.* The greater narrow-leav'd perennial Tobacco.

4. *NICOTIANA; minor.* C. B. P. The lesser or common *English Tobacco.*

5. *NICOTIANA; minor foliis rugosioribus, amplioribus.* *Vaill.*

The first Sort is known by the Planters in *America* under the Title of *Oroonoko*; of which there seems to be two different Kinds, varying in the Largeness and Texture of their Leaves, some having very broad, rough, roundish Leaves; and others are narrower, smoother, and do terminate in a Point: But neither of these Sorts are esteem'd by the *American* Planters, because the Produce of this (tho' it is much greater than the narrow-leav'd Sort) yet is not near so much esteem'd by the

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English.

English. This Sort is commonly cultivated in *Germany*, about *Hannover* and *Strasburgh*, and is somewhat hardier than the narrow-leav'd Sorts, which renders it preferable to that for cultivating in Northern Climates.

This Plant is order'd by the College of Physicians for Medicinal Use, and is what should be made use of for the *Unguentum Nicotiana*, (or Ointment of *Tobacco*) though many times the Lesser or *English Tobacco* is brought to Market for that Purpose.

The narrow-leav'd Sort is commonly call'd, The *Sweet-scented Tobacco*, from its having a much more agreeable Scent, when smok'd, than the broad-leav'd Sort; the Smoak of which is very offensive to most Persons who have not been accustomed to it. This Sort is cultivated in great Plenty in *Virginia*, *Cuba*, *Brazil*, and several other Parts of *America*; from whence it is brought to most Parts of *Europe*, but especially to *England*, it being prohibited to be cultivated in this Country, lest his Majesty's Revenues should be thereby lessened: But as a small Quantity is permitted to be cultivated for Medicinal Use, I shall briefly set down the Method how it may be propagated, so as to have fair large Leaves for that Purpose.

The Seeds of this Plant must be sown upon a moderate Hot-bed in *March*; and when the Plants are come up, they should be transplanted into a new Hot-bed of a moderate Warmth, about four Inches asunder each Way, observing to water and shade them until they have taken Root; after which you must let them have Air in Proportion to the Warmth of the Season, otherwise they will draw up very weak, and

be thereby less capable of enduring the open Air: You must also observe to water them frequently, (but while they are very young it should not be given to them in too great Quantities) though when they are pretty strong they will require to have it often and in plenty.

In this Bed the Plants should remain until the Beginning of *May*; by which time (if they have succeeded well) they will touch each other, therefore they should be enur'd to the open Air gradually: after which they must be taken up carefully, preserving a large Ball of Earth to each Root, and planted into a rich light Soil, in Rows two Feet asunder, and the Plants a Foot Distance in the Rows, observing to water them until they have taken Root; after which they will require no farther Care (but only to keep them clear from Weeds) until the Plants begin to shew their Flower-stems; at which time you should cut off the Tops of them, that their Leaves may be the better nourished, whereby they will be render'd larger, and of a thicker Substance. In *August* they will be full grown, when they should be cut for Use; for if they are permitted to stand longer, their under Leaves will begin to decay.

The Perennial Sort was brought from the *French Settlements* in the *West-Indies* into the *Royal Garden* at *Paris*, where it is cultivated in small Quantities for making Snuff. The Seeds of this kind I receiv'd from *Montieur de Jessen*, Demonstrator of the Plants in the *Royal Garden*: It has succeeded very well in the *Physick Garden*, and abides the Winter in a common Green-house without artificial Heat.

The two smaller Sorts of *Tobacco* are preserv'd in *Botanick Gardens* for

for Variety, but are seldom propagated for Use. The first Sort is found growing upon Dunghills in divers Parts of *England*. These are both very hardy, and may be propagated by sowing their Seeds in *March*, upon a Bed of light Earth, where they will come up, and may be transplanted into any Part of the Garden.

NIGELLA ; Fennel-Flower, or Devil in a Bush.

The Characters are ;

The Flower-cup consists of five Leaves, which expand in Form of a Star, and branch out into many other small narrow Leaves ; the Flower consists of many Leaves plac'd orbicularly, and expand in Form of a Rose, having many short Stamina surrounding the Ovary in the Center of the Flower ; which Ovary becomes a membranaceous Fruit, consisting of several Cells, which are furnish'd with Horns on the Top, and are full of Seeds.

The Species are ;

1. NIGELLA ; *arvensis, cornuta*. C. B. P. Wild horned Fennel-Flower.

2. NIGELLA ; *latifolia, flore majore, simplici, cærulea*. C. B. P. Broad-leav'd Fennel-Flower, with a large single blue Flower.

3. NIGELLA ; *angustifolia, flore majore, simplici, cæruleo*. C. B. P. Narrow-leav'd Fennel-Flower, with a large single blue Flower.

4. NIGELLA ; *angustifolia, flore majore, simplici, albo*. C. B. P. Narrow-leav'd Fennel-Flower, with a large single white Flower.

5. NIGELLA ; *flore majore, pleno, cæruleo*, C. B. P. Double blue Nigella, or Fennel-Flower.

6. NIGELLA ; *flore minore, simplici, candido*. C. B. P. Fennel-Flower, with a small white single Flower.

7. NIGELLA ; *flore minore, pleno & albo*. C. B. P. Fennel-Flower, with a small double white Flower.

8. NIGELLA ; *Orientalis, flore flavo, semine alato plano*. T. Cor. Oriental Fennel-Flower, with a yellow Flower, and a flat-wing'd Seed.

9. NIGELLA ; *Cretica, latifolia, odorata*. Park. Theat. Broad-leav'd, Sweet-scented, Candy Fennel-Flower.

There are some other Varieties of this Plant, which are preserv'd in some curious Botanick Gardens, but those here mention'd are what I have observ'd cultivated in the English Gardens at present.

All these Plants may be propagated by sowing their Seeds upon a Bed of light Earth, where they are to remain (for they seldom succeed well if transplanted) ; therefore in order to have them intermix'd amongst other annual Flowers, in the Borders of the Flower-Garden, the Seeds should be sown in Patches at proper Distances ; and when the Plants come up, you must pull up those which grow too close, leaving but three or four of them in each Patch, observing also to keep them clear from Weeds, which is all the Culture they require. In *July* they will produce their Flowers, and their Seeds will ripen in *August*, when they should be gather'd, and dry'd ; then rub out each Sort separately, and preserve them in a dry Place.

The Season for sowing these Seeds is in *March*, but if you sow some of them in *August*, soon after they are ripe, upon a dry Soil, and in a warm Situation, they will abide the Winter, and flower strong the succeeding Year ; by which Method they may be continu'd in Beauty most part of the Summer.

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The fifth Sort is that which is most commonly cultivated in *England*, the Seeds of which are sold in the Seed Shops, but the other Sorts deserve to be preserv'd as much as that; for the various Sorts, when rightly intermix'd, afford an agreeable Variety. They are all annual Plants, which perish soon after they have perfected their Seeds; which if permitted to scatter upon the Borders, will come up without any farther Care. The Plants commonly grow about a Foot high, and if they have a good Soil will send forth many Branches, each of which terminates in a Flower.

NIGHT-SHADE; *vide* Solanum.

NISSOLIA; Crimson Grass-Vetch; *vulgô*.

The Characters are;

It hath a papilionaceous Flower, like the Lathyrus, to which this Plant agrees in every respect, excepting the Leaves, which in this are produc'd singly, and are not terminated by Claspers.

There is but one Species of this Plant at present known, which is,

NISSOLIA; *vulgaris*. Tourn. Common Crimson Grass-Vetch.

This Plant is found wild in several Parts of *England*, growing commonly by the Sides of Foot-paths, but is not very common near *London*: I have gather'd it in a Field just before you come to *Putney-Common*, on the Left-hand Side of the Road, under the Hedge which parts the Field from the Road.

This Plant may be cultivated by sowing the Seeds in *August*, soon after they are ripe, on a dry Soil, and in a warm Situation, where they will rise soon after, and endure the Cold of our Climate very well, and flower early the succeeding Spring; but if you sow the Seeds

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in the Spring, the Plants commonly decay before they come to flower, as I have several times experienc'd: therefore you need only to let the Seeds fall upon the Ground when they are ripe, and they will grow without any farther Trouble, but only to keep them clear from Weeds.

The Flowers of this Plant are smaller than those of the Sweet Pea, but are much the same in Shape, and of a fine scarlet Colour, so that being intermix'd in large Borders amongst these and other annual Plants, it makes a pretty Variety, and deserves a Place in every good Garden.

NOLI ME TANGERE; *vide* Balsamina Mas.

NONSUCH, or FLOWER OF BRISTOL; *vide* Lychnis.

NORTHERN ASPECT is the least favourable of any in *England*, as having very little Benefit from the Sun, even in the Height of Summer, therefore can be of little Use, whatever may have been advanc'd to the contrary; for although many Sorts of Fruit-trees will thrive and produce Fruit in such Positions, yet such Fruit can be of little Worth, since they are depriv'd of the kindly Warmth of the Sun to correct their crude Juices, and render them well-tasted and wholesome. Therefore it is to little Purpose to plant Fruit-trees against such Walls, except it be those which are intended for Baking, &c. where the Fire will ripen and render those Juices wholesome, which for want of Sun could not be perform'd while growing.

You may also plant *Morello Cherries* for Preserving; and *White* and *Red Currants* to come late, after those which are expos'd to the Sun are gone: And if the Soil be warm and

and dry, some Sorts of Summer Pears will do pretty well on such an Exposure, and will continue longer in eating, than if they were more expos'd to the Sun. But you should by no means plant Winter Pears in such an Aspect, as hath been practis'd by many ignorant Persons; since we find, that the best South Walls, in some Years, are barely warm enough to ripen those Fruits.

NUMMULARIA; Money-wort, or Herb Two-pence.

This Plant grows wild in shady moist Places in divers Parts of *England*: But as it is seldom cultivated in Gardens, so I shall say nothing of its Culture in this Place.

NURSERY; There is no such thing as having a fine Garden or Plantation, without a *Nursery* both for Trees and Flowers, in which there are continually new Varieties of *Fruits*, *Timber*, or *Flowering Trees*, and choice *Flowers*, rais'd for a Supply of the several Parts of the *Garden*, *Orchard*, and *Wilderness*. The Size of this *Nursery* must be proportion'd to the Extent of your Garden, or design'd Plantation; so that it is impossible to be exact in determining the Quantity of Ground necessary to be employ'd in this Way. But for a *Nursery* of *Fruit*, *Forest*, or *Flowering Trees*, there should not be less than two or three Acres for a large Garden; but for a small Garden half an Acre will be sufficient. And for a *Nursery* for *Flower-Roots*, *Plants*, &c. one Acre for a large Garden, and a Quarter of an Acre for a small one, will be enough. But this (as I said before) cannot be well limited; since some Persons, who are very curious in raising vast Quantities of new Flowers from Seed, will employ more than three times the Ground that is necessary

only to raise a Supply of Flowers for their Borders, which are either annual, or biennial, and require to be brought up to supply the Place of such as have flower'd and decay'd. But I shall first take Notice of the Method for raising a *Nursery* of *Fruit* or *Forest Trees*: In doing of which, you should observe,

1. That the Soil in which you make the *Nursery*, be not better than that where the Trees are to be planted out for good: The not observing this, is the Reason that Trees are often at a Stand, or make but little Progress, for three or four Years, after they come from the *Nursery*; as it commonly happens to such Trees as are rais'd near *London*, and carry'd into the Northern Parts of *England*, where being planted in a poor Soil, and a much colder Situation, their Fruits seldom ripen well: Therefore it is by far the better Method (when you have obtain'd the Sorts you would propagate) to raise a *Nursery* of the several Sorts of Stocks proper for the various Kinds of Fruit upon which you may bud or graft them; and those Trees which are thus rais'd upon the Soil, and in the same Degree of Warmth where they are to be planted, will succeed much better than those brought from a greater Distance, and from a richer Soil.

2. This Ground ought to be fresh, and not such as has been already worn out by Trees, or other large-growing Plants; for in such Soil your Stocks will not make any Progress.

3. It ought not to be too wet, nor over-dry, but rather of a middling Nature; tho', of the two Extremes, dry is to be preferr'd: Because in such Soils (tho' the Trees do not make so great a Progress as

in moist) yet they are generally sounder, and more dispos'd to Fruitfulness.

4. You must also observe to inclose it, that Cattle and Vermin mayn't come in, for these will make sad Havock with young Trees, especially in Winter, when the Ground is cover'd with Snow, that they have little other Food which they can come at; some of the most mischievous of these Animals are *Hares* and *Rabbits*, which are great Destroyers of young Trees at that Season, by eating off all their Bark, therefore you must carefully guard your *Nursery* against these Enemies.

The Ground being inclos'd, should be carefully trench'd about eighteen Inches, or two Feet deep, provided it will allow it; this should be done in *August*, that it may be ready to receive young Stocks at the Season for Planting, which is commonly at the Beginning of *October*. In Trenching of the Ground, you must be very careful to cleanse it from the Roots of all noxious Weeds, such as *Couch-grass*, *Docks*, &c. which, if left in the Ground, will get in amongst the Roots of the Trees, so as not to be gotten out afterwards, and will spread and over-run the Ground, to the great Prejudice of your young Stocks.

After having dug the Ground, and the Season being come for Planting, you must level down the Trenches as equal as possible; and then lay out the Ground into Quarters, proportionable to the Size thereof; and those Quarters may be afterwards laid out in Beds, for the sowing of Seeds, or the Stones of Fruit.

The best Sort of Stocks for *Peaches*, *Nectarines*, &c. are such as are rais'd from the Stones of the

Muscle, and *White Pear-Plumb*: But you should never plant Suckers of these, (which is what some People practise); for those seldom make so good Stocks, nor are ever well-rooted Plants: Besides, they are very subject to produce great Quantities of Suckers from their Roots, which are very troublesome in the Borders or Walks of a Garden, and do greatly injure the Tree; so that you should annually, or at least every other Year, sow a few Stones of each Sort, that you may never be at a Loss for Stocks.

For *Pears*, you should have such Stocks as have been rais'd from the Kernels of the Fruit where *Perry* hath been made; or else preserve the Seeds of some Sorts of Summer *Pears*, which do generally shoot strong and vigorous, as the *Cuisse Madam*, *Windsor*, &c. which you should sow for Stocks, early in the Spring, upon a Bed of good light fresh Earth, where they will come up in about six Weeks, and, if kept clear from Weeds, will be strong enough to transplant out the *October* following. But for many Sorts of Summer and Autumn *Pears*, *Quince* Stocks are preferable to free (*i. e.* *Pear*) Stocks; these are very often propagated from Suckers, which are generally produced in Plenty from the Roots of old Trees; but those are not near so good as such as are propagated from Cuttings, which have always much better Roots, and are not so subject to produce Suckers as the other; which is a very desirable Quality; since these Suckers do not only rob the Trees of Part of their Nourishment, but are very troublesome in a Garden.

Apples are grafted or budded upon Stocks rais'd from Seeds which come from the *Cyder Press*,

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or upon *Crab* Stocks; the latter of which are esteem'd for their Durableness, especially for large Standard Trees; these should be rais'd from Seeds, as the *Pear* Stocks, and must be treated in the same Manner; for those procured from Suckers, &c. are not near so good: But for small Gardens, the *Paradise* Stock hath been of late greatly esteem'd; it being of very humble Growth, causing the Fruit Trees grafted or budded thereon to bear very soon, and they may be kept in small Compass: But these are only proper for very small Gardens, or by way of Curiosity; since the Trees thus rais'd are but of short Duration, and seldom arise to any Size to produce Fruit in Quantities, unless the Graft or Bud be bury'd in Planting, so that they put forth Roots, and then they will be equal to Trees grafted upon free Stocks, since they receive but small Advantage from the Stock.

For *Cherries*, you should make use of Stocks rais'd from the Stones of the common *Black*, or the wild *Honey-Cherry*, both of which are strong free Growers, and produce the cleanest Stocks.

For *Plums*, you may use the Stones of most free-growing Sorts; which will also do very well for *Apricocks*, these being not so difficult to take as *Peaches* or *Nectarines*; but (as I said before) these should not be rais'd from Suckers, for the Reason there assign'd, but rather from Stones.

There are some Persons who recommend the *Almond* Stock for several Sorts of tender *Peaches*, upon which they will take much better than upon *Plum* Stocks: But these being tender in their Roots, and apt to shoot early in the Spring, are by many People rejected: And

I think, if such tender Sorts of *Peaches* which will not take upon *Plum* Stocks, were budded upon *Apricocks*, they would take very well; as would all Sorts of *Peaches* which are planted upon dry Soils continue much longer, and not be so subject to blight, if they were upon *Apricocks*; for it is observ'd, that upon such Soils where *Peaches* seldom do well, *Apricocks* will thrive exceedingly; which may be owing to the Strength and Compactness of the Vessels in the *Apricocks*, which render it more capable of assimilating or drawing its Nourishment from the *Plum* Stock, which in dry Soils seldom afford it in great Plenty to the Bud; and the *Peach* Tree being of a loose, spongy Nature, is not so capable to draw its Nourishment therefrom, which occasions that Weakness which is commonly observed in those Trees when planted on a dry Soil.

There are some People who of late have budded and grafted *Cherries* upon Stocks of the *Cornish Cherry*, which, they say, will render the Trees more fruitful, and less luxuriant in Growth, so that they may be kept in less Compass; these Stocks having the same Effect upon *Cherries*, as the *Paradise* Stock hath on *Apples*.

Having provided yourself with young Stocks of all these different Sorts, which should be rais'd in the Seminary the preceding Year, you should proceed to transplanting of them in *October* (as was before directed) into the *Nursery*. The Distance which they should be planted, if design'd for Standards, should be three Feet and a half, or four Feet, Row from Row, and a Foot and a half distant in the Rows; but if for Dwarfs, three Feet, Row

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from Row, and one Foot in the Rows, will be a sufficient Distance.

In taking these Stocks out of the Seed-beds, you must raise the Ground with a Spade, in order to preserve their Roots as intire as possible; then with your Knife you should prune off all the very small Fibres; and if there are any which have a Tendency to root down-right, such Roots should be shortened: Then having thus prepar'd the Plants, you should draw a Line across the Ground intended to be planted, and with your Spade open a Trench thereby exactly strait, into which you should place them at the Distance before design'd, setting them exactly upright; and then put the Earth in close to them, filling up the Trench, and with your Foot press the Earth gently to the Roots of them, observing not to displace them so as to make the Rows crooked, which will render them unsightly. These Plants should by no means be headed, or pruned at Top, which will weaken them, and cause them to produce lateral Branches, and thereby spoil them.

If the Winter should prove very cold, it will be of great Service to your young Stocks, to lay some Mulch upon the Surface of the Ground near their Roots, which will prevent the Frost from penetrating the Ground so as to hurt the tender Fibres which were produced after planting: But you should be careful not to let it lie too thick near the Stems of the Plants, lest the Moisture of the Dung should injure the tender Bark, which it often does where there is not due Care taken to prevent it.

In the Summer-season, you must always observe to hoe and destroy

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the Weeds; which if permitted to remain in the *Nursery*, will greatly weaken and retard the Growth of your Stocks: And the succeeding Years, you should observe to dig up the Ground every Spring between the Rows, which will loosen it so, as that the Fibres may easily strike out on each Side, and the Weeds will be thereby destroy'd: You should also observe, where any of the Stocks have shot out lateral Branches, to prune them off, that they may be encourag'd to grow upright and smooth.

The second Year after Planting, such of the Stocks as are design'd for Dwarf-trees, will be fit to bud; but those which are design'd for Standards, should be suffer'd to grow five or six Feet high before they are budded or grafted. The Manner of Budding and Grafting being fully describ'd under their respective Heads, I shall not repeat them in this Place; nor need I say any thing more of treating these Trees after budding, that being also treated of under the several Articles of Fruits; I shall only add, that those Stocks, which were budded in the Summer, and have fail'd, may be grafted the following Spring; but *Peaches* and *Nectarines* seldom take well from Grafts; these should therefore be always budded.

The *Nursery* design'd for *Forest-trees* and *Flowering-shrubs*, should be larger than that for *Fruit-trees*, especially if you intend to make large Plantations of these Trees: But in planting of these, you should always observe to place the large growing Kinds by themselves, separate from those of lower Growth, otherwise the large Trees will overshadow and starve the smaller: But as the Method of propagating
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all the different Sorts of these Trees, whether from Seeds, Cuttings or Layers, is set down under their several Articles, so it is needless to repeat it in this Place.

I shall therefore only add, that after you have drawn off the Trees from any Part of your *Nursery*, you should, for a Year or two, employ the Ground for Kitchen-Garden, or some other Summer-Crops, in order to refresh it, before you plant it again with Trees; and you should always observe to put different Sorts of Trees upon the Ground from those which grew in the same Place before, otherwise they seldom thrive well.

The Ground you intend for the *Flower-Nursery*, should be well situated to the Sun, but defended from strong Winds by Plantations of Trees or Buildings, and the Soil should be light and dry, which must always be observ'd, especially for bulbous-rooted Flowers, which are design'd to be planted therein. The Particulars of which are exhibited under the Articles of *Flowers*.

In this *Nursery* should be planted the Off-sets of all your bulbous-rooted Flowers, where they are to remain until they become blowing Roots; when they should be remov'd into the Pleasure-Garden, and planted either in Beds or Borders, according to the Goodness of the Flowers, or the Management which they require.

You may also, in this Ground, raise the several Sorts of bulbous-rooted Flowers from Seed, by which Means new Varieties may be obtain'd: But most People are discouraged from setting about this Work, from the Length of Time before the Seedlings will come to flower; however, after a

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Person hath once begun, and constantly continu'd sowing every Year, after the Parcel first sown has flower'd, the regular Succession of them coming annually to flower, will not render this Method so tedious as it at first appear'd.

The seedling *Auriculas*, *Polyanthus's*, *Ranunculus's*, *Anemonies*, *Carnations*, &c. should be rais'd in this *Nursery*, where they should be preserv'd until they have flower'd; when you should mark all such as are worthy of being transplanted into the Flower-Garden; which should be done in their proper Seasons: For it is not so well to have all these seedling Flowers expos'd to publick View in the Flower-Garden, because it always happens, that there are great Numbers of ordinary Flowers produc'd amongst them, which will make but an indifferent Appearance in the Pleasure-Garden.

In this Place also should be rais'd all the Sorts of Biennial or Perennial Flowers from Seeds, to supply the Borders of the Pleasure-Garden as the old Roots decay; such as *Stock-Gilly-Flowers*, *Canterbury Bells*, *Fox Gloves*, *French Honeysuckles*, *Wall-flowers*, *Columbines*, *Hollyhocks*, *Campanula's*, and many other Sorts, which are all under their respective Articles treated of, with the Method of propagating each Kind: I shall therefore only add, That the Earth in this *Nursery* should be often chang'd, and fresh brought in; as also the several Sorts of Flowers which are there rais'd, should be every Year shifted into different Places, and not the same Sorts raised two or three Years upon the same Spot of Ground, for the Reason before assign'd.

NUX AVELLANA; vide *Corylus*.

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NUX JUGLANS; The Walnut.

The Characters are;

It hath Male Flowers (or Katkins) which are produc'd at remote Distances from the Fruit on the same Tree: The outer Cover of the Fruit is very thick and green, under which is a rough hard Shell, in which the Fruit is inclos'd, surrounded with a thin Skin; the Kernel is deeply divided into four Lobes; and the Leaves of the Tree are pinnated, or winged.

The Species are;

1. NUX JUGLANS; *five Regia vulgaris*. C. B. P. The Common Walnut.

2. NUX JUGLANS; *fructu maximo*. C. B. P. The large French Walnut.

3. NUX JUGLANS; *fructu tenero, & fragili putamine*. C. B. P. The thin-shell'd Walnut.

4. NUX JUGLANS; *bifera*. C. B. P. The Double Walnut.

5. NUX JUGLANS; *fructu serotino*. C. B. P. The late Ripe Walnut.

6. NUX JUGLANS; *fructu perduro*. Tourn. The Hard-shell'd Walnut.

7. NUX JUGLANS; *Virginiana nigra*. H. L. The Virginian Black Walnut.

8. NUX JUGLANS; *Virginiana, nigra, fructu oblongo, profundissime insculpto*. Rand. Virginian Black Walnut, with a long furrow'd Fruit.

9. NUX JUGLANS; *Virginiana, foliis vulgari similis, fructu subrotundo, cortice duriore levi*. Pluk. Alm. The Hickery, or White Virginian Walnut.

10. NUX JUGLANS; *Virginiana, alba, minor, fructu nuces moschata similis, cortice glabro, summo fastigio, veluti in aculeum producto*. Pluk. Phyt. The small Hickery, or White Virginian Walnut.

The six Sorts first mention'd are propagated promiscuously in England, and I believe are all seminal

Variations, and not distinct Species, as in most other Sorts of Fruit-trees; for it rarely happens, that the Trees rais'd from Seeds produce the same Sort of Fruit again: So that those who would be sure of their Fruit, should either make Choice of such Trees in the Nursery which have produc'd Fruit, and do prove to be the Sort they would have, or else inarch the Sorts intended upon any common Walnut-Stock; in which Method they will succeed, but these seldom make so good Trees, as those which are rais'd from Seeds.

The second and third Sorts are chiefly preferr'd for their Fruit, which are very large; and the Shells of the third Sort are so tender, as to be broken between the Fingers without any Difficulty, for which Reason it is esteem'd the best worth propagating, for the Fruit, of any of the Sorts.

The Virginian Sorts are preserv'd as Rarities by such Persons who are curious in collecting the several Sorts of Trees; but these are all worth cultivating for their Timber, which is preferable to that of our common Walnuts, and these Trees are equally as hardy, and some of them of much quicker Growth than the common Sort, especially the seventh and eighth Sorts; the latter of which produces great Quantities of Fruit annually in the Physick Garden, but they are of no Use, except to propagate the Species; for their Shells are so hard as scarcely to be broken with a Mallet, and the Kernel is so small that it is not worth the Trouble of coming at it.

All the Sorts of Walnuts which are propagated for Timber, should be sown in the Places where they are to remain, for the Roots of these

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these Trees do always incline downward; which being stopp'd or broken, do prevent their aspiring upward, so that they afterwards divaricate into Branches, and become low spreading Trees; but such as are propagated for Fruit, are greatly mended by transplanting, for hereby they are render'd more fruitful, and their Fruit are generally larger and fairer: It being a common Observation, That downright Roots do greatly encourage the luxuriant Growth of Timber in all Sorts of Trees; but such Trees as have their Roots spreading near the Surface of the Ground, are always the most fruitful.

The Nuts should be preserv'd in their outer Covers in dry Sand until *February*; when they should be planted in Lines, at the Distance you intend them to remain; but in the Rows they may be plac'd pretty close, for fear the Nuts should miscarry; and the young Trees, where they are too thick, may be remov'd after they have grown three or four Years, leaving the Remainder at the Distance where they are to stand.

In transplanting these Trees, you should always observe never to prune either their Roots or Branches, both which are very injurious to them; nor should you be too busy in lopping or pruning the Branches of these Trees, for it often causes them to decay: But when there is a Necessity of cutting any of their Branches off, it should be done early in *September*, that the Wound may heal over before the Cold increases, and the Branches should always be cut off quite close to the Trunk, otherwise the Stump which is left will decay, and rot the Body of the Tree.

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The best Season for transplanting these Trees, is so soon as the Leaves begin to decay, at which time, if they are carefully taken up, and their Branches preserv'd intire, there will be little Danger of their succeeding, although they are eight or ten Years old, as I have several times experienc'd.

This Tree delights in a firm, rich, loamy Soil, or such as is inclinable to Chalk or Marle, and will thrive very well in stony Ground, and on chalky Hills, as may be seen by those large Plantations near *Leatherhead*, *Godstone*, and *Carshalton* in *Surrey*, where are great Numbers of these Trees planted upon the Downs, which annually produce great Quantities of Fruit, to the great Advantage of their Owners; one of which, I have been told, farms the Fruit of his Trees, to those who supply the Markets, for thirty Pounds *per Annum*.

The Distance these Trees should be plac'd, ought not to be less than forty Feet, especially if regard be had to their Fruit; though when they are only design'd for Timber, if they stand near, it promotes their upright Growth. The Black *Virginian Walnut* is much more inclinable to grow upright than the common Sort, and the Wood being generally of a more beautiful Grain, renders it preferable to that, and better worth cultivating. I have seen some of this Wood which hath been beautifully vein'd with Black and White, which when polish'd, has appear'd at a Distance like vein'd Marble. This Wood is greatly esteem'd by the Cabinet-Makers for Inlaying, as also for Bedsteads, Stools, Tables and Cabinets, and is one of the most durable Woods for those Purposes yet

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yet known, it being rarely infected with Insects of any kind (which may proceed from its extraordinary Bitterness:) But it is not proper for Buildings of Strength, it being of a very brittle Nature, and mighty subject to break very short, though it commonly gives notice thereof by its Crackling some time before it breaks.

The general Opinion, That the beating of this Fruit improves the Trees, I do not believe, since in the doing of this, the younger Branches are generally broken and destroy'd: But as it would be exceeding troublesome to gather it by Hand, so in beating it off, great Care should be taken that it be not done with Violence, for the Reason before assign'd. In order to preserve the Fruit, it should remain upon the Trees till 'tis thorough ripe; when it should be beaten down, and laid in Heaps for two or three Days; after which they should be spread abroad, when, in a little Time, their Husks will easily part from the Shells: Then you must dry them well in the Sun, and lay them up in a dry Place, where Mice or other Vermin cannot come to them: In which Place they will remain good for four or five Months.

NUX VESICARIA; *vide* Staphylodendron.

NYMPHÆA; The Water-Lily.

The Characters are;

The Flower consists of several Leaves, which expand in form of a Rose; out of the Flower-cup arises the Pointal, which afterwards becomes an almost globular Fruit, consisting of many Cells, fill'd with Seeds, which are, for the most part, oblong.

The Species are;

1. NYMPHÆA; *alba, major.*

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C. B. P. The great white Water-Lily.

2. NYMPHÆA; *lutea, major.* C. B. P. The great yellow Water-Lily.

3. NYMPHÆA; *lutea, minor, flore fimbriato.* 7. B. The lesser yellow Water-Lily, with a fring'd Flower.

There are some other Species of this Plant, all of which are Natives of deep standing Waters, and therefore not to be cultivated in any other Places.

The best Method to propagate these Plants, is, to procure some of their Seed-Vessels just as they are ripe and ready to open: These should be thrown into Canals, or large Ditches of Standing-Water, where the Seeds will sink to the Bottom; and the following Spring the Plants will appear floating upon the Surface of the Water, and in *June* and *July* will produce their beautiful large Flowers: When they are once fix'd to the Place, they will multiply exceedingly, so as to cover the whole Surface of the Water in a few Years.

In some small Gardens I have seen these Plants cultivated in large Troughs of Water, where they have flourish'd very well, and have annually produc'd great Quantities of Flowers: But as the Expence of these Troughs is pretty great (their Insides requiring to be lin'd with Lead to preserve them) so there are few People who care to be at that Charge.



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OAK; *vide* Quercus.
OBELISCOTHECA;
Dwarf American Sun-flower, *vulg.*
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The Characters are;

It hath radiated Flowers, having many Florets which are fertil, but the half Florets are barren: The Placenta is commonly conical, and filled with chaffy Empalements, which appear folded up, in each of which is an Ovary, which is shap'd like an Obelisk reversed, having a hollow Base. These Parts are contain'd in one common Flower-cup, which is deeply cut into several Segments, and expands in Form of a Star; to which may be added, the Leaves are placed alternately.

The Species are;

1. OBELISCOTHECA; *integrifolia, radio aureo, umbone atrorubente.* Hort. Elth. Dwarf Sun-flower, with entire Leaves, the Rays of the Flower of a Gold Colour, and a dark red Disk.

2. OBELISCOTHECA; *Doronicifolia, radio purpureo, umbone atrorubente.* Dwarf Sun-flower, with Leaves like Leopard's-bane, the Rays of the Flower purple, and a dark red Disk.

These Plants are both Natives of America, the first of them was brought from Virginia, and the other from Carolina. They may both be propagated by parting of their Roots in the Spring, planting the Heads into Pots filled with fresh rich Earth, placing 'em in an open Situation, where they may have the Benefit of Sun and Showers, in which Place they may remain during the Summer-season; but in Winter they must be shelter'd under a Frame, to protect them from severe Frost, observing to let them have as much free Air as possible in mild Weather: They must be frequently refresh'd with Water, especially in Summer, when it should be given them in Plenty; but in Winter they must have it

more sparingly. The first Sort increases pretty fast in England, whereby it is become pretty common, and is preserved for the Sake of its Flowers, which are produced in Plenty, and are of long Duration, each Flower continuing in Beauty five or six Weeks; and these being succeeded by new Flowers, the Plants are commonly furnish'd with them four or five Months.

The second Sort is less common than the first, by Reason of the few Off-sets it produces from the Side, and the Seeds rarely being perfected in Europe, the Plants cannot be greatly increas'd; therefore, if a Person could procure the Seeds of this Plant from Carolina, it would be the surest Method to obtain a Stock of the Plants. The Seeds of both these Plants should be sown on a moderate Hot-bed, and when the Plants are grown tolerably strong, they should be each planted into a separate Pot, and inur'd to the open Air, by Degrees, after which they must be treated as hath been directed for the old Plants.

OCULUS CHRISTI; vide Hortum Sylvestre.

OCYMUM; Basil.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Crest (or Upper-lip) is upright, roundish, notched, and larger than the Beard (or Lower-lip) which is generally curl'd or gently cut. Out of the Flower-cup rises the Pointal, attended by four Embryo's, which afterwards become so many Seeds inclos'd in a Husk, which was before the Flower-cup; this Husk is divided into two Lips, the upper one growing upright, and is split into two, but the under one is cut into several Parts.

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The Species are;

1. OCYUM; *vulgatus*. C. B. P. Common Basil.

2. OCYUM; *vulgatus*, *foliis ex nigro-virescentibus*, *flore albo*. H. R. P. Common Basil with dark green Leaves and white Flowers.

3. OCYUM; *minus*, *angustifolium*, *foliis serratis*. C. B. P. Lesser Basil with narrow serrated Leaves.

4. OCYUM; *minus*, *angustifolium*, *foliis bullatis*. H. R. P. Lesser narrow-leav'd Basil with warted Leaves.

5. OCYUM; *minimum*. C. B. P. The least Basil, commonly call'd, Bush-Basil.

6. OCYUM; *minimum*, *foliis ex purpurâ nigricantibus*. H. R. P. The least Basil with dark purple Leaves.

7. OCYUM; *Citri odore*. C. B. P. Basil with a Citron Scent.

8. OCYUM; *latifolium*, *maculatum*, *vel crispum*. C. B. P. Broad-leav'd Basil with curl'd spotted Leaves.

There are several other Varieties of this Plant mention'd by Botanick Writers, most of which are seminal Variations, which do not continue, but are annually varying from Seeds, so that it would be needless to mention them here; some of those here inserted are also Varieties, but as they are the most remarkable, I have given them a Place for the Sake of those who love Varieties.

These Plants being annual, are propagated from Seeds, which should be sown in *March*, upon a moderate Hot-bed; and when the Plants are come up, they should be transplanted into another moderate Hot-bed, observing to water and shade them, until they have taken Root, after which they should have Plenty of Air in mild Weather, otherwise they will draw

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up very weak; you must also water 'em frequently, for they love Moisture. In *May* they should be taken up with a Ball of Earth to their Roots, and transplanted either into Pots or Borders, observing to shade them until they have taking Root, after which they will require no farther Care, but to clear 'em from Weeds, and refresh them with Water in dry Weather. Tho' these Plants are only propagated from Seeds, yet if you have any particular Sort which may arise from Seeds, which you are desirous to increase, you may take off Cuttings, any time in *May*, and plant 'em on a moderate Hot-bed, observing to water and shade 'em for about ten Days, in which time they will take Root, and in three Weeks Time will be fit to remove either into Pots or Borders, with the seedling Plants. In *August* these Plants will perfect their Seeds, when those Sorts which appear the most distinct, should have their Seeds preserved separate, for saving the following Spring.

The first Sort is what the College of Physicians have prescribed for Medicinal Use, but the fifth Sort is most esteemed for its Beauty and Scent, by those who cultivate them to adorn their Gardens.

OENANTHE; Water Dropwort.

The Characters are;

It is an umbelliferous Plant, whose Flower consists of many Heart-shap'd Leaves, which expand in Form of a Rose: The Ovary is fix'd to the Top of the Empalement, which turns to a Fruit compos'd of two oblong Seeds, that are gibbous and streak'd on one Side, and plain on the other, ending, as it were, in some Prickles,

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Prickles, the middlemost of which is stronger than the rest.

The *Species* are ;

1. OENANTHE ; *cicuta facie Lobelii. Park. Theat.* Hemlock Dropwort.

2. OENANTHE ; *aquatica. C.B.P.* Water Dropwort.

There are several other *Species* of this Plant, some of which are Natives of *England* ; but as they are not at present useful, nor of any Beauty, I shall omit enumerating them in this Place.

The first of those here mention'd is very common by the Side of the *Thames* on each Side *London*, as also by the Sides of large Ditches and Rivers in divers Parts of *England* : This Plant commonly grows four or five Feet high, with strong-jointed Stalks, which being broke, do emit a yellowish foetid Juice: The Leaves are somewhat like those of the common *Hemlock*, but are of a lighter-green Colour : The Roots divide into four or five larger taper ones, which, when separated, have some Resemblance to *Parsnips* ; for which some ignorant Persons have taken and boil'd them, whereby Themselves and Family have been poison'd.

The poisonous Quality of this Plant hath led some Persons to believe it is the *Cicuta* of the Antients: But, according to *Wepfer*, the *Sium alterum Olusatris facie* of *Lobel* is what the Antients call'd *Cicuta*, as may be seen at large in *Wepfer's Book de Cicuta*.

The second Sort is very common in moist Soils, and by the Sides of Rivers in divers Parts of *England* : This is not suppos'd to be near so strong as the first, but is of a poisonous Quality.

All the Sorts of these Plants do naturally grow in moist Places ; so

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that whoever hath a mind to cultivate them, should sow their Seeds soon after they are ripe in Autumn, upon a moist Soil, where they will come up, and thrive exceedingly the following Summer, and require no farther Care, but to clear them from Weeds.

OLEA ; The Olive.

The *Characters* are ;

The Leaves are, for the most part, oblong and ever-green ; the Flower consists of one Leaf ; the lower Part of which is hollow'd, but the upper Part is divided into four Parts ; the Ovary, which is fix'd in the Center of the Flower-cup, becomes an oval, soft pulpy Fruit, abounding with a fat Liquor, enclosing a hard rough Stone.

The *Species* are ;

1. OLEA ; *fativa. C. B. P.* The manur'd Olive.

2. OLEA ; *Africana, folio longo, lato supra atroviridi splendente, infra pallide viridi. Boerb. Ind.* African Olive, with a broad long Leaf, of a shining dark-green Colour on the upper-side, but of a paler-green underneath.

3. OLBA ; *Africana, folio Buxi, crasso, atroviridi, lucido, corrice albo, scabro. Boerb. Ind.* The African Box-leav'd Olive.

4. OLEA ; *minor, Lucensis, fructu odorato. Tourn.* The Luca Olive.

5. OLEA ; *fructu majori, carne crassa. Tourn.* Olive, with a larger Fruit, having a thicker Pulp.

6. OLEA ; *Sylvestris, folio molli incano. C.B.P.* The Oleaster, or Wild Olive, with soft hoary Leaves.

These five first Sorts are preserv'd in the Gardens of the Curious, where they are planted either in Pots or Cases, and remov'd into the Green-house in the Winter, with Oranges, Myrtles, &c. but they are most of them hardy enough to endure

duce the Cold of our ordinary Winters in the open Air, provided they are planted upon a dry Soil, and in a warm Situation; tho' in severe Winters they are often demolished, or at least lose their Heads, or are kill'd to the Surface; but this is what they are liable to in the South Parts of *France*, in which Country these Trees abound; and yet in very sharp Winters are most of them destroy'd. There was a Parcel of these Trees growing in the Gardens of *Cambden-House* near *Kensington* a few Years since, which were seven or eight Feet high, and in some good Seasons did produce very good Fruit: These were planted against a South-Wall, but were permitted to grow up rude without pruning, or fastening to the Wall, (which they do by no means care for); and during the Time they were below the Top of the Wall, they thrive very well; but after their Heads were gotten above the Wall, the North-Winds did usually every Winter greatly prejudice them, and I believe the late hard Winter [1729] did entirely demolish them.

These Plants may be propagated by laying down of their tender Branches, (in the manner practis'd for other Trees) which should remain undisturb'd two Years; in which time they will have taken Root, and may then be taken off from the old Plants, and transplanted either into Pots fill'd with fresh light Earth, or into the open Ground in a warm Situation. The best Season for transplanting them is the Beginning of *April*; when you should, if possible, take the Opportunity of a moist Season, and those which are planted in Pots, should be plac'd in a shady Part of the Green-house until they have taken Root; but those planted in

the Ground should have Mulch laid about their Roots, to prevent the Earth from drying too fast, and now and then refresh'd with Water, but you must by no means let them have too much Moisture, which will rot the tender Fibres of their Roots, and destroy the Trees. When the Plants have taken fresh Root, those in the Pots may be expos'd to the open Air, with other hardy Exoticks, with which they should be hous'd in Winter, and treated as *Myrtles* and other less tender Trees and Shrubs; but those in the open Air will require no farther Care until the Winter following, when you should mulch the Ground about their Roots, to prevent the Frost from penetrating deep into it: And if the Frost should prove very severe, you should cover them with Mats, which will defend them from being injur'd thereby; but you must be cautious not to let the Mats continue over them after the Frost is pass'd, lest by keeping them too close, their Leaves and tender Branches should prove mouldy for want of free Air, which will be of as bad Consequence to the Trees as if they had been expos'd to the Frost, and many times worse, for it seldom happens, if they have taken much of this Mould, or have been long cover'd, so that it has enter'd the Bark, that they are ever recoverable again; whereas it often happens, that the Frost only destroys the tender Shoots, but the Body and larger Branches remaining unhurt, do put out again the succeeding Spring.

These Trees are generally brought over from *Italy* every Spring, by the Persons who bring over the *Oranges*, *Jasmines*, &c. from whom they may be procur'd pretty reasonable,

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sonable, which is a better Method than to raise them from Layers in this Country, that being too tedious; and those which are thus brought over, have many times very large Stems, to which Size young Plants in this Country would not arrive in ten or twelve Years Growth. When you first procure these Stems, you should (after having soak'd their Roots twenty four Hours in Water, and clean'd them from the Filth they have contracted in their Passage) plant them in Pots fill'd with fresh, light, sandy Earth, and plung'd into a moderate Hot-bed, observing to skreen them from the Violence of the Sun in the Heat of the Day, and also to refresh them with Water, as you shall find the Earth in the Pots dry. In this Situation they will begin to shoot in a Month or six Weeks after; when you should let them have Air in Proportion to the Warmth of the Season: And after they have made pretty good Shoots, you should inure them to the open Air by degrees; into which they should be remov'd, placing them in a Situation where they may be defended from strong Winds: In this Place they should remain until *October* following; when they must be remov'd into the Green-house, as was before directed. Having thus manag'd these Plants until they have acquir'd strong Roots, and made tolerable good Heads, you may draw them out of the Pots, preserving the Earth to their Roots, and plant them in the open Air in a warm Situation, where you must manage them as was before directed for the young ones, and these will in two or three Years produce Fruit, provided they do well. The *Luca* and *Box-leav'd Olives* are the hardiest, for which Reason they

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should be preferr'd to plant in the open Air, but the first Sort will grow to be the largest Trees.

The *Oleaster* is very hardy, and will endure the severest Cold of our Climate, provided it have a dry Soil, and is not too much expos'd to the cold Winds. This will grow to the Height of sixteen or eighteen Feet, and make a large Head; and if planted among other Exotick Trees in Wilderness-Quarters, will greatly add to their Variety by its Silver-colour'd Leaves; and during the Season of its Flowering, (which is in *June*) it pertumes the circumambient Air to a great Distance, tho' the Flowers are very small, and of little Beauty. This sometimes produces Fruit in *England*, when the Trees are pretty old, but it often happens, that if they bear any Quantity of Fruit, they die soon after.

This Tree may be propagated by laying down the tender Branches, which will take Root in one Year's Time; when they may be taken off from the old Plants, and plac'd where they are to remain, for they do not care to be often transplanted. The best Season for removing them is the latter End of *March*, or the Beginning of *April*, just before the Leaves come out; when you should also observe to mulch the Ground about their Roots, and refresh them with Water, as they may require it; and after they have taken good Root in the Ground, they will grow very quick, and in two or three Years will produce Flowers.

OMPHALODES; Venus Navelwort.

The Characters are;

The Flower consists of one Leaf, which expands in a circular Order, and is cut into several Segments; the Pointal, which rises in the Middle

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of the Flower, becomes a Fruit, compos'd of four hollow, umbilicated Capsules, somewhat resembling a Basket; in each of which is contain'd one almost flat Seed adhering to the Placenta, which is pyramidal and four-corner'd.

The Species are;

1. OMPHALODES; *Lusitanica, lini folio. Tourn.* Venus Navel-wort, vulgô.

2. OMPHALODES; *Lusitanica, elatior, Cynoglossi folio. Tourn.* Taller Portugal Navel-wort, with a Hound's-tongue Leaf.

3. OMPHALODES; *pumila, verna, Symphyti folio. Tourn.* Low Vernal Venus Navel-wort, with a Comfry-leaf, or Lesser Borage.

The first of these Plants hath been a long Time in the *English* Gardens. The Seeds of this kind are sold in the *London* Shops, as a Dwarf annual Flower, to be us'd for Edgings; for which Purpose it is by no means proper, for it often happens, that not a tenth Part of the Seeds do grow, though they were sav'd with all possible Care, so that the Plants will be very thin, and in Patches; but however, it is a pretty Ornament to the Borders of the Pleasure Garden, if sown in Patches, as hath been directed for the Dwarf *Lychnis*, and other annual Plants of the same Growth, amongst which this Plant makes a pretty Variety. The Seeds of it should be sown in Autumn, soon after they are ripe; at which Season they will come up very well, (whereas those sown in the Spring do seldom succeed) and the Plants will abide the Cold of our ordinary Winters, and will flower early the succeeding Spring, from which Plants you will have good Seeds in July; but those sown in the Spring do very often fail of ripening Seeds.

The second Sort is only in some curious Botanick Gardens at present, though it is equally as hardy as the first, and must be treated in the same Manner. This grows taller, and hath broader Leaves than the first, in which Respects the only Difference between them consists.

The third Sort is an abiding Plant, and multiplies very fast by its trailing Branches, which take Root at their Joints as they lie upon the Ground, and may be taken off, and transplanted to make new Plants. These require a moist Soil and a shady Situation, where they will thrive exceedingly, and produce great Quantities of pretty blue Flowers early in the Spring, for which it is chiefly valued.

ONAGRA: Tree Primrose; vulgô.

The Characters are;

It hath a Rose-Flower consisting generally of four Leaves placed orbicularly and resting on the Empalement, out of whose upper Part (which is fistulous) rises the Pointal, the under Part turning to a Fruit which is Cylindrical, gaping in four Parts, and divided into four Cells filled with Seeds, which are generally corner'd and adhere to the Placenta.

The Species are;

1. ONAGRA; *latifolia. Inst. R. H.* Broad-leav'd Tree Primrose.

2. ONAGRA; *latifolia, flore dilutior. Inst. R. H.* Broad-leav'd Tree Primrose, with paler yellow Flowers.

3. ONAGRA; *latifolia, floribus amplis. Inst. R. H.* Broad-leav'd Tree Primrose, with ample Flowers.

4. ONAGRA; *angustifolia. Inst. R. H.* Narrow-leav'd Tree Primrose.

5. ONAGRA; *angustifolia, caule rubro, flore minori. Inst. R. H.* Narrow-leav'd Tree Primrose, with red Stalks and a smaller Flower.

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6. ONAGRA; *Americana foliis Persicariae amplioribus, parvo flore luteo. Plum.* American Tree Primrose, with ample Arisart Leaves and a small yellow Flower.

7. ONAGRA; *Bonariensis villosa, flore mutabili. Hort. Elth.* Hairy Tree Primrose from Buenos Ayres, with a changeable Flower.

The first Sort is very common in most English Gardens, where, when it has been suffer'd to scatter its Seeds, it will come up and flourish without any Care, and many times becomes a troublesome Weed. The four next mention'd are equally hardy, and will grow in almost any Soil or Situation. The Seeds of these Plants may be sown in March, in an open Situation, and when the Plants come up, they should be kept clean from Weeds, and where they come up too close, some of them should be pulled up, to allow room for the others to grow. In this Place the Plants may remain till Michaelmas, when they should be transplanted where they are to remain for flowering. These Plants produce a great Quantity of Seed, which, if permitted to scatter, will sufficiently stock the Garden with Plants, but the old Plants rarely continue after they have seeded.

The sixth and seventh Sorts are much tenderer than the former, and require to be rais'd in a Hot-bed, where they must be treated as hath been directed for the *Balsamina*, to which I refer the Reader to avoid Repetition. These are Plants of no great Beauty, but are preserv'd in some Gardens for Variety.

ONIONS; *vide Cepa.*

ONOBRYCHIS; Cock's Head, or Saint-Foin.

The Characters are;
It hath a papilionaceous Flower,

out of whose Empalement rises the Pointal, which afterwards becomes a crested Pod, which is sometimes rough and full of Seeds, shape'd like a Kidney; to which may be added, the Flowers grow in a thick Spike.

The Species are;

1. ONOBRYCHIS; *foliis viciae, fructu echinato major, floribus dilute rubentibus. C. B. P.* Greater Cock's-head, with Vetch Leaves, rough Fruit, and pale-red Flowers.

2. ONOBRYCHIS; *foliis viciae, fructu echinato major, floribus eleganter rubentibus. C. B. P.* Greater Cock's-head, with Vetch Leaves, rough Fruit, and beautiful red Flowers.

3. ONOBRYCHIS; *fructu echinato minor. C. B. P.* Smaller Cock's-head, with rough Fruit, or Medick Vetchling.

The two first are Varieties which only differ in the Colour of their Flowers, the same Seeds often producing both Sorts, tho' sav'd from one Plant: As there is also another Variety with a white Flower, which doth come from the same Seed, so that they may pass for one Plant.

This is an abiding Plant, which if sown upon a dry, gravelly, or chalky Soil, will continue eighteen or twenty Years; but if it be sown upon a deep, light, moist Soil, the Roots will run down into the Ground, and in the Winter Season the Moisture will rot the Roots, so that it seldom lasts above two Years in such Places.

This is esteem'd one of the best Sorts of Fodder, for most Cattle, and is a great Improvement to shallow, chalky Hills, upon which it succeeds better than in any other Soil, and will continue many Years; and the Roots of this Plant, when plough'd in, do greatly enrich the Ground.

The best Season for sowing of this Seed is in the Beginning or Middle of *March*, (according as the Season is early or late) observing always to do it in dry Weather, otherwise the Seed will be apt to burst with Moisture, and so never come up. These Seeds being large, there will require a great Quantity to sow an Acre: The common Allowance is four Bushels to an Acre, but I would not advise above three at most: And if this Seed were sown in Rows, (in the Manner directed for the *Medica*) it would be a great Improvement to the Plants; for when they have Room enough they are very subject to branch out on every Side, and become very strong; so that when they are in Rows, that the Ground between them can be stirr'd with a Hand-Plough, it will cause them to shoot much stronger than when they grow so close that there can be no Culture bestow'd on them.

I have taken up Roots of this kind, where they have grown singly, and kept clear from Weeds, whole Shoots have spread near two Feet wide, and were much stronger than those which grew nearer together upon the same Soil.

There are some Persons who recommend the sowing *Oats* or *Barley* with this Seed, but that is a very bad Method, for what is gain'd from the Crop of *Corn* will be doubly lost in the *Saint Foin*; and this generally holds true in most Sorts of Grass-Seeds, for the *Corn* growing over it, doth so weaken the Crop beneath, that it scarcely recovers its Strength in a Year's Time after.

The Ground in which this Seed is sown, should be well ploughed and made very fine; and if you sow it in Rows, the Drills should be

made eighteen Inches asunder, and about two Inches deep, in which the Seed should be sown indifferently thick; for if the Plants come up too close, it will be very easy to hoe them out, so as to leave the remaining ones six or eight Inches asunder; for the Ground should be hoed, after the Plants are come up, to destroy the Weeds, which if suffer'd to grow, would soon overbear the young ones, and destroy them; but when the Plants have obtain'd Strength, they will prevent the Weeds from growing up amongst them.

The first Year after sowing, you should by no Means feed it down, for the Crown of the Roots being then young and tender, the Cattle would eat it so low as to entirely destroy the Roots; and if large Cattle were let in upon it, they would trample it down so much as to prevent its shooting again: Therefore the first Year it should be mowed, which should be done when it is in Flower, being careful to turn it often, that it may the sooner dry and be remov'd; for while it continues upon the Ground, it greatly retards the Roots from shooting again.

The Time when this Crop will be fit to cut the first Year, is toward the latter End of *July* or the Beginning of *August*: After this is clear'd off, the Roots will soon shoot again, and by the End of *September* (provided the Season be favourable) there will be a fine Crop fit for feeding: At which Time, or soon after, you may turn in Sheep, which will, in eating down the Grass, enrich the Ground with their Dung, whereby the Roots will be greatly strengthened; but you should not suffer them to remain too long upon it, lest, as I before observ'd, they

they should eat it down too low, which would destroy the Roots; nor should they ever be suffer'd to remain upon it longer than the Middle of *March*; after which Time it should be let grow for a Crop, which will be fit to cut the latter End of *May*; and if you do not feed it, there will be a second Crop by the End of *July* following, so that you may have two Crops every Year, besides the Advantage of feeding it down in Winter and Spring; and if you observe to stir the Ground betwixt the Rows, after every Cutting, (as was directed for the *Medica*) it will be of great Service to the Roots, and occasion the Shoots to be much stronger than if wholly neglected, as is the common Practice.

This Sort of Hay is excellently good for Horses, and is esteem'd one of the best Sorts of Food for most Cattle, especially in the Spring, there being no Danger attending it, as there is in *Clover*, and some other Sorts of Fodder; it breeds abundance of Milk, and the Butter that is made of it is very good.

And altho' it is so common in many Parts of *England*, yet a few Plants of the deep-red flower'd Sort, when dispos'd in large Borders of the Pleasure-Garden, do afford an agreeable Variety: The Flowers, which are of a beautiful red Colour, being collected into a long Spike, and continuing a long Time in Beauty, do make a very pretty Mixture amongst other Flowers in the Borders of large Gardens, where there is Room; and the Roots will abide several Years without renewing, requiring very little Culture, being extreme hardy, in respect to Heat or Cold, provided they are planted upon a dry Soil.

The third Sort is annual; nor are the Flowers so beautiful as those of the former Sort, for which Reason it is seldom cultivated, except in Botanick Gardens, for Variety. This may be sown in the Beginning of *March* upon a light fresh Soil, where the Plants will come up in *April*, and will require no farther Care but to clear 'em from Weeds: The Seeds will ripen in *August*, when they should be gather'd, and preserv'd for sowing the succeeding Spring.

OPULUS: The Gelder Rose.

The Characters are;

The Leaves are like those of the Maple-Tree: The Flowers consist of one Leaf, which expands in a circular Rose Form, and is divided at the Top into five Parts; these are collected (for the most part) in Form of an Umbel, the largest of which grow on the Outside, and are barren; but those in the Middle are fruitful producing red Berries, in each of which is contain'd one flat Heart-shap'd Seed.

The Species are;

1. OPULUS; *Ruelli*. Marsh Elder, or Gelder Rose, with flat Flowers.
2. OPULUS; *flore globoso*. Tourn. The Gelder, or Gelderland Rose.
3. OPULUS; *flore globoso, folio variegato*. The Gelder Rose, with strip'd Leaves.

The first of these Plants is very common in moist Woods in divers Parts of *England*, but is seldom cultivated in Gardens; though, if the Soil be moist in which this Tree be planted, it will afford a very agreeable Prospect, both in the Season when it is in Flower, and also in the Autumn when the Fruit is ripe, which generally grows in large Clusters, and is of a beautiful red Colour: So that where a

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Wilderness or other Plantation of Flowering Trees is design'd, and the Ground be moist, this and the next are two of the most proper Trees for such Purposes; these thriving much better, and will produce their Flowers larger and in greater Quantities, than when they are placed in a dry Situation.

The second Sort is very common in old Gardens in most Parts of *England*: This produces only barren Flowers, which being all very large, are produced in a globular Form, so that, at a Distance, they resemble Snow-balls; whence the People in some Countries give it the Name of *Snow-ball Tree*. This Difference was at first accidental, as is the Case of all double Flowers which commonly arise from Seeds; and tho' these are not productive of Fruit, yet for the Sake of their Flowers they are much more esteem'd than the single Sort by the Gardeners.

The strip'd Sort is also an Accident, occasion'd by an Obstruction of the Juices, as is the Case of all variegated Plants: This is preserv'd as a Curiosity by such as are Lovers of strip'd Trees and Plants, but must not be planted in a rich Soil, which would cause them to grow vigorously, whereby they would be in Danger of becoming plain again.

All these Sorts may be propagated either from Suckers or by laying down their Branches, which will take Root in a Year's time; when they may be taken off from the old Plants, and transplanted either into a Nursery, where they may be train'd up for two or three Years, or plac'd where they may remain for good. The best Time to remove these Trees, is at *Michaelmas*, as soon as their Leaves begin

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to decay, that they may be well rooted before the Drought of the next Spring comes on, which is often destructive to such as have been newly transplanted, if they are not carefully attended with Water.

They are extreme hardy, and will endure the severest Cold of our most Northern Situations, and are only impatient of great Heat and Drought, so that they are very proper to plant in very cold Soils and Places which are greatly expos'd to the North Winds, where few other Shrubs will thrive so well. They will grow—to the Height of twelve or fourteen Feet, and if reduc'd to regular Heads, are very ornamental during the Season of Flowering; and their Flowers are very proper to intermix with *Peonies* and other large Flowers, for Basins and Flower-pots to adorn Halls and Chimnies. Their Season of Flowering is in *May*, though their Flowers do sometimes continue in Beauty a great Part of *June*, especially if the Weather prove cool and moist.

OPUNTIA: The Indian Fig.

The Characters are;

The Flower consists of many Leaves, which expand in Form of a Rose, having a great Number of Stamina in the Center, which grow upon the Top of the Ovary: The Ovary afterwards becomes a fleshy umbilicated Fruit, with a soft Pulp inclosing many Seeds, which are, for the most part, angular.

The Species are;

1. *OPUNTIA; vulgô, Herbariorum. F. B.* The Common Indian Fig of the Botanists.

2. *OPUNTIA; minima, folio subrotundo. Tourn.* Least Indian Fig, with roundish Leaves.

3. *OPUNTIA;*

3. OPUNTIA; *folio oblongo, media*. Tourn. Middle Indian Fig, with an oblong Leaf, commonly call'd, The Cochineal Fig-Tree.

4. OPUNTIA; *folio minori, rotundiori & compressiori*. Tourn. Indian Fig, with a smaller, rounder, and flatter Leaf.

5. OPUNTIA; *major, validissimis spinis munita*. Tourn. The greater Indian Fig, armed with very strong Prickles.

6. OPUNTIA; *maxima, folio spinoso, latissimo & longissimo*. Tourn. The largest Indian Fig, with a very broad and long prickly Leaf.

7. OPUNTIA; *folio spinoso, longissimo & angusto*. Tourn. Indian Fig, with a very long, narrow, prickly Leaf.

8. OPUNTIA; *latifolia, crassiori folio, spinis albis numerosis armato*. Boerb. Ind. Indian Fig, with a broad thick Leaf, arm'd with many white Spines.

9. OPUNTIA; *Curassavica, minima*. H. Beaum. The smallest Indian Fig from Curacoa, commonly call'd, The Pin Pillow.

10. OPUNTIA; *Americana, arbor excelsa, foliis reticulatis, flore flavescente*. Plum. American Indian Fig, which grows to be a tall Tree, with netted Leaves and a yellowish Flower.

11. OPUNTIA; *folio plano, glabro, Scolopendria*. Boerb. Ind. Indian Fig, with a plain smooth Leaf, like Spleenwort.

The first of these Plants hath been a long Time in England, and is the most common Sort in Europe: This, Mr. Ray and Dr. Robinson observ'd growing wild in the Kingdom of Naples, by the Sides of the Highways, on the Sides of the Mountains, and among Rocks in great abundance; but in these Northern Parts of Europe, it is generally

preserv'd in Green-houses with other Exotick Plants; tho' I have planted it under a warm Wall in a very dry Soil, where it has continu'd for five Years, and endured the severest of our Cold without any Cover, and has produc'd a greater Quantity of Flowers and Fruit than those which were hous'd: So that the Cold is not so great an Enemy to this Plant as Wet, which if suffer'd to lie long upon it, or given in too large Quantities to the Root, will destroy it in a short Time.

The other Sorts are much tenderer, being all of them Natives of the warm Parts of the *West-Indies*. These are some of them so tender as not to be preserv'd without the Assistance of a Stove (especially the ninth and eleventh Sorts) in any tolerable Degree of Health; for if they have not some additional Warmth to the Air of the House in Winter, their Stems will shrivel and look yellowish and wither'd.

These Plants may all be propagated by cutting off their Branches at the Joints, during any of the Summer Months; which should be laid in a warm dry Place for a Fortnight, that the wounded Part may be heal'd over, otherwise they will rot with the Moisture, which they imbibe at that Part, as is the Case with most other succulent Plants. The Soil in which these Plants are planted, should be compos'd after the following Manner, *viz.* One third of light fresh Earth from a Pasture, a third Part Sea-sand, and the other Part should be one half rotten Tan, and the other half Lime-rubbish: These should be well mix'd, and laid in a Heap three or four Months before it be us'd, observing to turn it over at least once a Month, that the several Parts may be well united; then
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you should pass it through a rough Screen, in order to separate the largest Stones and Clods, but by no means sift it too fine, which is a very common Fault: Then you should reserve some of the smaller Stones and Rubbish to lay at the Bottom of the Pots, in order to keep an open Passage for the Moisture to drain off; which is what must be observ'd for all succulent Plants, for if the Moisture be detain'd in the Pots, it will rot their Roots, and destroy the Plants.

When you plant any of the Branches of these Plants, you should plunge the Pots into a moderate Hot-bed, which will greatly facilitate their taking Root: You should also refresh them now and then with a little Water, but be very careful not to let them have too much, or be too often water'd, especially before they are rooted: When the Plants begin to shoot, you must give them a large Share of Air by raising the Glasses, otherwise their Shoots will draw up so weak as not to be able to support themselves; and after they have taken strong Root, you should inure them to the Air by degrees, and then remove them into the Stove where they should remain, placing them near the Glasses, which should always be open'd in warm Weather, so that they may have the Advantage of a free Air, and yet be protected from Wet and Cold.

During the Summer-season, these Plants will require to be often refresh'd with Water, but it must not be given to them in large Quantities, lest it rot them; and in Winter they should have very little Water given to them, but that should be proportion'd to the Warmth of the Stove, for if the

Air be kept very warm, they will require to be often refresh'd, otherwise their Branches will shrink; but if the House be kept in a moderate Degree of Warmth, they should have very little, for Moisture at that Season will rot them very soon.

The Heat in which these Plants thrive best, is the temperate Point, as mark'd on Mr. *Fowler's Thermometers*; for if they are kept too warm in Winter, it causes their Shoots to be very tender, and thereby very liable to decay if not duly attended. Those Sorts which are inclinable to grow upright, should have their Branches supported with Stakes, otherwise their Weight is so great, that it will break them down.

These Plants are by most People expos'd to the open Air in the Summer-season, but they thrive much better if they are continu'd in the Stoves, provided the Glasses be kept open, so that they may have free Air; for when they are set abroad, the great Rains which generally fall in Summer, together with the unsettled Temper of the Air in our Climate, does greatly diminish their Beauty by retarding their Growth, and sometimes in wet Summers they are so replete with Moisture as to rot in the succeeding Winter; nor will those Plants which are set abroad, (I mean the tender Sorts) produce their Flowers and Fruit in such Plenty as those which are constantly preserv'd in the House.

The third Sort is suppos'd to be the Plant upon which the *Cockineal-Fly* breeds: These deposite their Eggs in the Center of the Flowers, upon the Crown of the Ovary; and when they are hatch'd, the young Insects feed upon the Fruit, which

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which is of a deep-red Colour within, and if eaten by Men, colours their Urine as red as Blood; which has often frightened Strangers who have eaten of the Fruit, when they have thought it was real Blood which they voided, tho' there are no ill Effects attend it.

The ninth and eleventh Sorts are less common than the others, and are rarely seen but in very curious Gardens: These are the tenderest of them all, and should be plac'd in a warm Part of the Stove in Winter, but must have very little Water given them at that Season, and in Summer must always be kept in the House, for they will not bear the open Air in the Heat of Summer, which is seldom very regular in this Country.

ORANGE; *vide* Aurantium.

ORCHARD: In planting of an Orchard, great Care should be had to the Nature of the Soil, that such Sorts of Fruit as are adapted to grow upon the Soil intended to be planted, may be chosen, otherwise there can be little Hopes of their succeeding; and it is for want of rightly observing this Method, that we see in many Countries Orchards planted which never arrive to any tolerable Degree of Perfection, their Trees starving, and their Bodies are either cover'd with Moss, or the Bark cracks and divides, both which are evident Signs of the Weakness of the Trees; whereas, if instead of Apples, the Orchard had been planted with Pears, Cherries, or any other sort of Fruit to which the Soil had been adapted, the Trees might have grown very well, and produc'd great Quantities of Fruit.

As to the Position of an Orchard (if you are at full Liberty to choose) a rising Ground, open to

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the *South East*, is to be preferr'd; but I would by no means advise to plant upon the Side of a Hill, where the Declivity is very great, for in such Places the great Rains do commonly wash down the better Part of the Soil, whereby the Trees would be depriv'd of proper Nourishment: But where the Rise is gentle, it is of great Advantage to the Trees, by admitting the Sun and Air between them better than it can upon an intire Level, which is an exceeding Benefit to the Fruit, by dissipating Fogs, and drying up the Damps, which when detain'd amongst the Trees, do mix with the Air and render it rancid: If it be defended from the *West, North, and East* Winds, it will also render the Situation still more advantageous; for it is chiefly from those Quarters that Fruit-Trees receive the greatest Injury: Therefore, if the Place be not naturally defended from these by rising Hills (which is always to be preferr'd;) then you should plant large-growing Timber-Trees at some Distance from the Orchard, to answer this Purpose.

You should also have a great Regard to the Distance of planting the Trees, which is what few People have rightly consider'd; for if you plant them too close, they will be liable to Blights, and the Air being hereby pent in amongst them, will cause the Fruit to be ill-tasted, having a great Quantity of damp Vapours from the Perspiration of the Trees, and the Exhalations from the Earth mix'd with it, which will be imbib'd by the Fruit, and render their Juices crude and unwholesome.

Wherefore I can't but recommend the Method which has been lately practis'd by some particular Gentlemen

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Gentlemen with very good Success; and that is, To plant the Rows of Trees fourscore or a hundred Feet asunder, and the Distance of the Trees in the Rows threescore Feet: The Ground between the Trees they plough and sow with Wheat and other Crops, in the same manner as if it were clear from Trees, and they observe their Crops to be full as good as those quite expos'd (except just under each Tree when they are grown large and afford a great Shade;) and by thus ploughing and tilling the Ground, the Trees are render'd more vigorous and healthy, scarcely ever having any Moss or other Marks of Poverty, and will abide much longer, and produce better Fruit.

If the Ground in which you intend to plant an *Orchard* has been Pasture for some Years, then you should plough in the *Green Sward* the Spring before you plant the Trees; and if you will permit it to lie a Summer fallow, it will greatly mend it, provided you stir it two or three times, to rot the Sward of Grass, and prevent Weeds growing thereon.

At *Michaelmas* you should plough it pretty deep, in order to make it loose for the Roots of the Trees, which should be planted thereon in *October*, provided the Soil be dry; but if it be moist, the Beginning of *March* will be a better Season.

When you have finish'd planting the Trees, you should provide some Stakes to support them, otherwise the Wind will blow them out of the Ground; which will do them much Injury, especially if they have been planted some Time; for the Ground at that Season being warm, and for the most part

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moist, the Trees will very soon push out a great Number of young Fibres, which, if broken off by their being displac'd, will greatly retard the Growth of them.

In the Spring following, if the Season should prove dry, you should cut a Quantity of green Turf, which must be laid upon the Surface of the Ground about their Roots, turning the Grass downward, which will prevent the Sun and Wind from drying the Ground, whereby the Expence of Watering will be sav'd; and after the first Year they will be out of Danger, provided they have taken well.

Whenever you plough the Ground betwixt these Trees, you must be careful not to go too deep amongst their Roots, lest you should cut them off, which would greatly damage the Trees: but if you do it cautiously, the stirring of the Surface of the Ground will be of great Benefit to them: Tho' you should observe, never to sow too near the Trees, nor suffer any great-rooting Weeds to grow about them, which would exhaust the Goodness of the Soil, and starve 'em.

If, after the Turf which was laid round the Trees be rotted, you dig it gently about their Roots, it will greatly encourage them.

There are some Persons who plant many Sorts of Fruit together in the same *Orchard*, mixing the Trees alternately: but this is a Method which should always be avoided; for hereby there will be a very great Difference in the Growth of the Trees, which will not only render 'em unsightly, but also render the Fruit upon the lower Trees ill-tasted, by the tall ones over-shadowing them. So that if you are determin'd to plant several Sorts of Fruit on the same Spot, you

you should observe to place the largest growing Trees backward, and so proceed to those of less Growth, continuing the same Method quite through the whole Plantation; whereby it will appear at a Distance in a regular Slope, and the Sun and Air will more equally pass throughout the whole Orchard, that every Tree may have an equal Benefit therefrom.

The Soil of your Orchard should also be mended once in two or three Years with Dung, or other Manure, which will also be absolutely necessary for the Crops sown between: So that where Persons are not inclinable to help their Orchards, where the Expence of Manure is pretty great; yet as there is a Crop expected from the Ground besides the Fruit, they will the more readily be at the Charge upon that Account.

In making choice of Trees for an Orchard, you should always observe to procure them from a Soil nearly akin to that where they are to be planted, or rather poorer, for if you have them from a very rich Soil, and that wherein you plant them is but indifferent, they will not thrive well, especially for four or five Years after planting: So that 'tis a very wrong Practice to make the Nursery, where young Trees are rais'd, very rich, when the Trees are design'd for a middling or poor Soil. The Trees should also be young and thriving; for whatever some Persons may advise to the contrary, yet it has always been observ'd, that tho' large Trees may grow and produce Fruit after being remov'd, they never make so good Trees, nor are so long-liv'd, as those which are planted while young.

These Trees, after they are planted out, will require no other pruning but only to cut out dead Branches, or such as cross each other so as to render their Heads confus'd and unsightly: The too often pruning them, or shortening their Branches, is very injurious, especially to *Cherries* and *Stone-Fruit*, which will gum prodigiously, and decay in such Places where they are cut: And the *Apples* and *Pears* which are not of so nice a Nature, will produce a greater Quantity of lateral Branches, which will fill the Heads of the Trees with weak Shoots whenever their Branches are thus shorten'd; and many times the Fruit is hereby cut off, which, on many Sorts of Fruit-Trees, is first produc'd at the Extremity of their Shoots.

It may perhaps seem strange to some Persons, that I should recommend the allowing so much Distance to the Trees in an Orchard, because a small Piece of Ground will admit of very few Trees when planted in this Method: But they'll please to observe, that when the Trees are grown up, they will produce a great deal more Fruit, than twice the Number when planted close, and will be vastly better tasted; the Trees, when placed at a large Distance, being never so much in Danger of Blighting as in close Plantations, as hath been observ'd in *Herefordshire*, the great County for Orchards, where they find that Orchards so planted, or so situated, as that the Air is pent up amongst the Trees, the Vapours which arise from the Damp of the Ground, and the Perspiration of the Trees, collect the Heat of the Sun, and reflect it in Streams so as to cause what they call

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call a *Fire-blast*, which is the most hurtful to their Fruits; and this is most frequent where the *Orchards* are open to the South-Sun.

But as *Orchards* should never be planted, unless where large Quantities of Fruit are desired, so it will be the same thing to allow twice or three times the Quantity of Ground; since there may be a Crop of Grain of any Sort upon the same Place (as was before said;) so that there is no Loss of Ground: And for a Family only it is hardly worth while to plant an *Orchard*; since a Kitchen-Garden well planted with *Espaliers* will afford more Fruit than can be eaten while good, especially if the Kitchen-Garden be proportion'd to the Largeness of the Family: And if *Cyder* be required, there may be a large Avenue of *Apple-Trees* extended cross a neighbouring Field, which will render it pleasant, and produce a great Quantity of Fruit; or there may be some single Rows of Trees planted to surround Fields, &c. which will fully answer the same Purpose, and be less liable to the *Fire-blasts* before-mention'd.

ORCHIS; *Satyrion*, or Fool-Stones.

The Characters are;

It hath an anomalous Flower, consisting of six dissimilar Leaves, the five uppermost of which are so dispos'd as to imitate in some manner a *Helmet*; the under one being of many Shapes, headed for the most part, and tail'd, sometimes representing a naked Man, sometimes a *Butter-fly*, a *Drone*, a *Pigeon*, an *Ape*, a *Lizard*, a *Parrot*, a *Fly*, and other Things: but the *Empalement* afterwards becomes a Fruit divided into three Cells, in which are contain'd many small Seeds. To these Notes

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should be added, The Flowers are collected into a Spike; and the Roots are fleshy, sometimes roundish and double like *Testicles*, sometimes flat, and in a manner shap'd like a Hand.

The Species are;

1. ORCHIS; *morio mas*, foliis maculatis. C. B. P. The Male Fool-stones.

2. ORCHIS; *Morio foemina*. Park. Theat. The Female Fool-stones.

3. ORCHIS; *barbata foetida*. J. B. The Lizard Flower, or Great Goat-stones.

4. ORCHIS; *Pannonica*. 4 Cluss. Hist. Little Purple-flower'd Orchis.

5. ORCHIS; *obscurè purpurea*, odorata. Tourn. Sweet-smelling dark-purple Orchis.

6. ORCHIS; *purpurea*, spica congesta pyramidalis. Raii Syn. Purple late-flowering Orchis.

7. ORCHIS; *odorata moschata*, siue *Monorchis*. C. B. P. The Yellow Sweet or Musk Orchis.

8. ORCHIS; *Spiralis alba odorata*. J. B. Triple Ladies Traces.

9. ORCHIS; *latifolia*, hians cucullo, major. Tourn. The Man Orchis.

10. ORCHIS; *anthropophora*, *Orcaedes*. Col. Ec. Man Orchis, with a ferrugineous, and sometimes a green Colour.

11. ORCHIS; *myodes*, *galea* & *alis herbidis*. J. B. The common Fly Orchis.

12. ORCHIS; *myodes major*. Park. Theat. The Greater Fly Orchis.

13. ORCHIS; *fusca*, *galea* & *alis purpurascens*. J. B. The Common Humble Bee *Satyrion*, or Bee-flower.

14. ORCHIS; *five Testiculus Sphegodes*, *hirato flore*. J. B. Humble Bee *Satyrion*, with green Wings.

15. ORCHIS; *hermaphrodica*, *bifolia*. J. B. Butter-fly *Satyrion*.

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16. ORCHIS; *alba bifolia minor, calcar oblongo*. C. B. P. The Lesser Butter-fly Satyrion.

17. ORCHIS; *palmata, pratensis, latifolia, longis calcaribus*. C. B. P. The Male-handed Orchis, or Male Satyrion Royal.

18. ORCHIS; *palmata, pratensis, maculata*. C. B. P. The Female-handed Orchis, or Female Satyrion Royal.

19. ORCHIS; *palmata minor, calcaribus oblongis*. C. B. P. Red-handed Orchis, with long Spurs.

20. ORCHIS; *palmata minor, flore luteo-viridi*. Raii Syn. Handed Orchis, with a greenish Flower, by some call'd, The Frog Orchis.

All these Sorts of Orchis grow wild in several Parts of England; but, for the extreme Oddness and Beauty of their Flowers, deserve a Place in every good Garden: And the Reason for their not being cultivated in Gardens, proceeds from their Difficulty to be transplanted: Tho' this, I believe, may be easily overcome, where a Person has an Opportunity of marking their Roots in their Time of Flowering, and letting them remain until their Leaves are decay'd, when they may be transplanted with Safety: For it is the same with most Sorts of bulbous or fleshy-rooted Plants, which, if transplanted before their Leaves decay, seldom live, notwithstanding you preserve a large Ball of Earth about them; for the extreme Part of their Fibres extend to a great Depth in the Ground, from whence they receive their Nourishment; which if broken or damag'd by taking up their Roots, they seldom thrive after; for tho' they may sometimes remain alive a Year or two, yet they grow weaker, until they quite decay: so that whoever would cultivate them,

should search them out in their Season of Flowering, and mark 'em; and when their Leaves are decay'd the Roots should be taken up, and planted in a Soil and Situation as nearly resembling that wherein they naturally grow, as possible, otherwise they will not thrive: So that they cannot be plac'd all in the same Bed; for some are only found upon chalky Hills, others in moist Meadows, and some in shady Woods, or under Trees: but if their Soil and Situation be adapted to their various Sorts, they will thrive and continue several Years, and, during their Season of Flowering, will afford as great Varieties as any Flowers which are at present cultivated.

The first Sort flowers in April, and is very common in Pastures and bushy Places in most Parts of England.

The second Sort flowers in May: This is common in Pastures almost every-where.

The third Sort is more rare than the former: This is found in a Lane near *Dartford* in *Kent*, and is one of the largest of all the Kinds: It flowers at the Latter-end of May.

The fourth Sort grows upon dry barren Hills, particularly between *Northfleet* and *Gravesend*: This flowers at the Latter-end of April.

The fifth Sort is found in great Plenty in *Westmorland*, but particularly in the Meadows, upon both the Banks of *Eden*, throughout several Parishes: It flowers in May.

The sixth Sort grows upon dry, barren, or chalky Hills in divers Parts of England: This flowers in June.

The seventh Sort grows upon chalky Hills, but is pretty rare; it is particularly found upon the Hills near

near *Cawsham* in *Berkshire*, and upon *Gogmagog Hills* in *Cambridgeshire*: It flowers in *May*.

The eighth Sort flowers in *August*: This grows upon dry stony Places, as also in moist Pastures in the North Parts of *England*.

The ninth Sort grows upon *Cawsham Hills*, as also upon the dry Banks on the Road-side between *Greenbith* and *Northfleet* in *Kent*; and flowers in *May*.

The tenth Sort is found about *Northfleet* with the former, and flowers about the same time, as doth also the eleventh and twelfth.

The thirteenth Sort flowers in *June*: This grows upon dry Places in many Parts of *England*, as doth the fourteenth Sort, which flowers in *April*.

The fifteenth and sixteenth Sorts grow in shady Places in divers Parts of *England*: They both flower in *May*.

The seventeenth and eighteenth Sorts grow in moist Pastures very plentifully; the first flowering in *May*, the other in *June*.

The nineteenth Sort grows in moist Pastures, and flowers in *June*.

The twentieth Sort grows in dry Pastures, and flowers in *May*.

Thus having mention'd the several Places of Growth, and the Times of these Plants Flowering, it will be no very difficult Task for a Person to search them out; which, if it happens to be in a Place where the Roots may be mark'd, and taken up after their Leaves are decay'd (as I said before) there will be little Hazard of their succeeding: But if you are oblig'd to take 'em up in Flower, you must be very careful to preserve as much Earth as possible to their Roots, otherwise there can be little Hopes

of their living. Nor should they be kept out of the Ground longer than till you can conveniently get them Home; for if the Air dries the Earth about 'em, they will shrink, and be good for nothing; and if the Earth be water'd, the Roots of such as grow upon dry Soils will rot and perish; therefore you should be very careful in this Particular.

ORIGANUM; Origany, or Bastard Marjoram.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Upper Lip is erect, roundish, and divided into two; but the Under Lip is cut into three Segments: Out of the Flower-cup rises the Pointal, attended, as it were, by four Embryo's, which afterwards become so many roundish Seeds inclos'd in the Flower-cup: To which should be added, The Flowers grow in scaly Spikes, somewhat resembling those of the Muscary.

The Species are;

1. ORIGANUM; *vulgare, spontaneum*. J. B. Wild Marjoram.
2. ORIGANUM; *onites*. C. B. P. Pot Marjoram.
3. ORIGANUM; *Heracleoticum, cunila gallinacea Plinii*. C. B. P. Winter Sweet Marjoram; *vulgô*.
4. ORIGANUM, *sylvestre, humile*. C. B. P. Dwarf Wild Origany.
5. ORIGANUM; *sylvestre, foliis variegatis*. Hort. Ed. Wild Marjoram, with variegated Leaves.
6. ORIGANUM; *Orientalis, folio brunella glauco, flore albo*. Vaill. Oriental Wild Marjoram, with a Self-heal, and white Flowers.

There are several other Species of this Plant preserv'd in curious Botanic Gardens, for Variety: but as they are never propagated for Use, so I shall not enumerate them in this Place.

The

The first Sort here mention'd grows wild upon dry chalky Hills, and on gravelly Soils, in divers Parts of *England*, and is gather'd by the People who supply the Markets with Medicinal Herbs; so that it is rarely cultivated in Gardens.

The second Sort was formerly more cultivated than at present: This was us'd as a Pot-herb for Soops, &c. but of late Years it has been almost neglected: It is said to grow wild in some Parts of *England*.

The third Sort has the Appearance of common *Sweet Marjoram*; and having a sweet Smell, is cultivated in many Gardens near *London*, and brought to the Markets to supply the Want of *Sweet Marjoram* early in the Season, before the *Marjoram* (which is an annual Plant) can be procur'd, and is us'd by the People who make up Nosegays.

The fourth and fifth Sorts are preserv'd as Varieties by some People, who use the fourth, many times, as a Pot-herb, instead of the second.

The sixth Sort was brought from the *Levant*, but is hardy enough to endure the severest Cold of our Climate in the open Air, provided it be planted upon a dry Soil.

These Plants may be all propagated by sowing their Seeds in the Manner directed for *Marjoram*, and the Plants should be treated in the same Way, therefore I shall forbear repeating it in this Place: They may also be propagated by parting their Roots, or planting Cuttings in the Spring, which, if water'd and shaded, will take Root in a few Days, and multiply exceedingly.

Their Roots will abide several Years, and require no farther Culture but to keep them clear from

Weeds, and transplant them every Year, otherwise they will grow so large as to rot in the Middle for want of Air.

ORNITHOGALUM; Star of Bethlehem.

The Characters are;

It hath a Lily Flower, compos'd of six Petals (or Leaves) ranged circularly, whose Centre is possess'd by the Pointal, which afterwards turns to a roundish Fruit, which is divided into three Cells, and fill'd with roundish Seeds: To which must be added, it hath a bulbous or tuberose Root, in which it differs from Spider-wort.

The Species are;

1. ORNITHOGALUM; *angustifolium, majus, floribus ex albo virescentibus*. C. B. P. Spiked Star of Bethlehem, with a greenish Flower.

2. ORNITHOGALUM; *umbellatum medium, angustifolium*. C. B. P. Common Star of Bethlehem.

3. ORNITHOGALUM; *luteum*. C. B. P. Yellow Star of Bethlehem.

4. ORNITHOGALUM; *majus, spicatum, flore albo*. C. B. P. The Great White Star of Bethlehem.

5. ORNITHOGALUM; *spicatum, flore viridilactescente*. C. B. P. Spiked Star of Bethlehem, with a whitish-green Flower.

6. ORNITHOGALUM; *luteum, five pallidum majus*. C. B. P. Great Yellow, or Pale Star of Bethlehem.

7. ORNITHOGALUM; *Neapolitanum*. J. B. Star of Naples; *vulgô*.

There are several other Species of this Plant mention'd by Botanick Writers; but those here enumerated are what I have observ'd in the *English* Gardens.

These Plants are propagated by Off-sets, which their Roots do commonly produce in great Plenty. The best Time to transplant their Roots is in *July*, when their Leaves are

are decay'd ; for if they be remov'd late in Autumn, their Fibres will be shot out, when they will be very apt to suffer, if disturb'd. They should have a light sandy Soil ; but it must not be over-dung'd, which would cause their Roots to decay. They may be intermix'd with other Bulbous-rooted Flowers in the Borders of the *Pleasure-Garden*, where they will afford an agreeable Variety, and continue in Flower a long Time. Their Roots need not be transplanted oftener than every other Year ; for if they be taken up every Year, they will not increase so fast ; but when they are suffer'd to remain too long unremov'd, they will have so many Off-sets about them as to weaken their blowing Roots. These may also be propagated from Seeds, which should be sown and managed as most other Bulbous-rooted Flowers, and will produce their Flowers in three or four Years after sowing.

ORNITHOPODIUM ; Bird's-Foot.

The Characters are ;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards becomes a hooked jointed Pod, for the most part waved, containing in each Joint one roundish Seed : To which must be added, That several Pods grow together in such a manner as to resemble the Foot of a Bird.

The Species are ;

1. ORNITHOPODIUM ; *radice tuberculis nodosa*. C. B. P. Bird's-Foot, with a knobbed Root.

2. ORNITHOPODIUM ; *majus*. C. B. P. The Greater Bird's-Foot.

3. ORNITHOPODIUM ; *Scorpioides, siliquâ compressâ*. Tourn. Caterpillar Bird's-Foot, with a flat Pod.

4. ORNITHOPODIUM ; *portulaca folio*. Tourn. Bird's-Foot, with a Purslane Leaf.

These Plants are propagated by sowing their Seeds in the Spring upon a Bed of light fresh Earth, where they are to remain ; (for they seldom do well when they are transplanted) ; and when the Plants come up, they must be carefully clear'd from Weeds ; and where they are too close, some of the Plants should be pull'd out, so as to leave the remaining ones about ten Inches asunder. In June these Plants will flower, and the Seeds will ripen in August. There is no great Beauty in them ; but for the Variety of their jointed Pods, they are preserv'd by some curious Persons in their Pleasure-Gardens ; where, if their Seeds be sown in Patches in the Borders, each Sort distinctly by itself, and the Plants thinn'd, leaving only two at each Patch, they will require no farther Care ; and will add to the Variety, especially where the *Snail* and *Caterpillar* Plants are preserv'd, which are very proper to intermix with them. They are all annual Plants, which perish soon after their Seeds are ripe.

OROBUS ; Bitter Vetch.

The Characters are ;

It hath a papilionaceous Flower, consisting of the Standard, the Keel, and the Wings ; out of whose Empalement rises the Pointal wrapt up in the Membrane, which afterwards becomes a round Pod, full of Oval-shap'd Seeds : To which must be added, That two Leaves join'd together grow upon a Rib that ends in a Point.

The Species are ;

1. OROBUS ; *sylvaticus, purpureus, vernus*. C. B. P. Vernal Purple-Wood Bitter-Vetch.

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2. OROBUS ; *sylvaticus nostras*. *Raii Syn.* English Wood Bitter-Vetch.

3. OROBUS ; *sylvaticus, foliis oblongis glabris*. *Tourn.* Wood, or Heath Peas.

4. OROBUS ; *sylvaticus, foliis vicie*. *C. B. P.* Wood Orobus, with Vetch-Leaves.

5. OROBUS ; *latifolius, repens, siliqua parva*. *Boerh. Ind.* Broad-leav'd Creeping Orobus, with a small Pod, commonly call'd, Venetian Vetch.

The first of these Plants was brought from *Germany*, where it grows in the Forests in great Plenty, as also about *Geneva*, but it is hardy enough to endure the Cold of our Climate in the open Air, provided it be planted in a dry Soil. This may be propagated either from Seeds or by parting the Roots in the Spring. If you sow the Seeds, you should observe to put them pretty early into the Ground before the dry Weather comes on, otherwise the Seeds will not come up: As you should also transplant the Roots just before they begin to shoot, or else their Flowers will be very weak. The Roots of this Plant will abide many Years, and spring up fresh every Year, and in *April* produces fine Spikes of purple Pea-bloom Flowers, which are succeeded by strait black Pods two Inches long, containing several roundish bitter Seeds.

The second and third Sorts grow wild in Woods and shady Places in divers Parts of *England*, where, during their Season of Flowering, they make a handsome Appearance; and when transplanted under Hedges in a Garden, they will thrive extremely well, and produce great Quantities of Flowers every Spring.

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These were formerly recommended by Dr. *Lifter*, to be sown for Fodder, as a great Improvement; but I believe them not very proper for that Purpose, since they seldom thrive well when expos'd to the Sun, nor will they ever rise to any considerable Height, their Branches trailing upon the Ground, unless they are supported, so that in a wet Season they would be apt to rot.

The fourth Sort rises to be two or three Feet high, and hath strong upright Stalks; upon which, in *May*, are produc'd great Quantities of purple Flowers, which are succeeded by long strait Pods, containing oblong bitter Seeds. The Root of this Plant will abide many Years; the Stalks decaying in Winter, but do spring up again the succeeding Year: It delights in a dry fresh Soil, and deserves a Place in large Borders under the Shade of Trees, where it will thrive well, and make a handsome Appearance.

The fifth Sort was formerly preserv'd in the Green-house as a tender Plant, but will endure the Cold of our Climate very well, if planted in a dry Soil; and those Roots which are planted in the full Ground, will produce much stronger Flowers than those preserv'd in Pots. This Plant flowers in *April*, but seldom produces good Seeds in this Country.

These Plants may all be propagated either from Seeds, or by parting of their Roots, in the manner directed for the first Sort; and if rightly dispos'd in the Borders of a Garden, do afford an agreeable Variety: And since they are hardy, requiring but little Culture, they deserve a Place in every good Garden.

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ORYZA;

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ORYZA; Rice.

The *Characters* are;

It hath its Grains dispos'd into a Panicle, which are almost of an oval Figure, and are cover'd with a thick Husk, somewhat like Barley.

There is but one *Species* of this Plant; *viz.*

ORYZA; *Matth.* Rice.

This Grain is greatly cultivated in most of the Eastern Countries, where it is the chief Support of the Inhabitants; and great Quantities of it are brought into *England* and other *European* Countries every Year, where it is in great Esteem for Puddings, &c. it being too tender to be produc'd in these Northern Countries, without the Assistance of artificial Heat: But from some Seeds which were formerly sent to *South-Carolina*, there have been great Quantities produc'd, and it is found to succeed equally as well there as in its native Country, which is a very great Improvement to our *American* Settlements.

This Plant grows upon moist Soils, where the Ground can be flow'd over with Water after it is come up; so that whoever would cultivate it in *England* for Curiosity, should sow the Seeds upon a Hot-bed: And when the Plants are come up, they should be transplanted into Pots fill'd with rich light Earth, and plac'd in Pans of Water, which should be plung'd into a Hot-bed, and as the Water wastes, so it must, from Time to Time, be renew'd again: In *July* these Plants may be set abroad in a warm Situation, still preserving the Water in the Pans, otherwise they will not thrive; and towards the latter End of *August* they will produce their Grain, which will ripen tole-

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rably well, provided the Autumn proves favourable.

OSIER; *vide* Salix.

OSMUNDA REGALIS; Osmund Royal, or Flowering Fern.

We have two *Species* of this Plant in *England*, *viz.*

1. OSMUNDA; *vulgaris* & *palustris*. *Inst. R. H.* Common Marsh Osmund Royal.

2. OSMUNDA; *foliis lunatis*. *Inst. H. R.* Osmund Royal, with Moonwort Leaves.

The first Sort is sometimes used in Medicine. This grows upon Bogs in divers Parts of *England*, from whence the Roots may be procured, and planted in a moist Soil and a shady Situation, where they will thrive tolerably well. The best time for transplanting them is early in the Spring, before they begin to shoot.

The second Sort is found in *Yorkshire*, and some other Northern Counties, but is seldom preserved in Gardens.

OX-EYE; *vide* Bupthalmum.

OXYACANTHA; *vide* Berberis.

OXYS; Wood Sorrel.

The *Characters* are;

It hath a Bell-shap'd Flower, consisting of one Leaf, having its Brim wide expanded, and cut into several Divisions; the Pointal which rises from the Flower-cup becomes an oblong membranous Fruit, divided into five seminal Cells, opening outward from the Base to the Top, and enclosing Seeds which often start from their Lodges, by reason of the elastick Force of the Membrane which involves them.

The *Species* are;

1. OXYS; *flore albo*. *Inst. H. R.* Common Wood Sorrel, with a white Flower.

2. OXYS;

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2. Oxys; *flore purpurascente*. *Inst.* R. H. Wood Sorrel, with a purplish Flower.

3. Oxys; *lutea*. *J. B.* Wood Sorrel, with a yellow Flower.

4. Oxys; *lutea, Americana, erectior*. *Inst.* R. H. Upright yellow American Wood Sorrel.

The first Sort grows wild in moist Woods and other shady Places in divers Parts of *England*, and flowers in *April* and *May*. This is the Sort which is directed by the College of Physicians to be used in Medicine, but the Markets are generally supplied with the fourth Sort, which is not near so good, having very little taste: The People who cultivate Medicinal Plants have propagated this Sort in their Gardens, because it grows tall and branches, so that they can readily gather and tie it up in Bunches for Sale, whereas the true Sort grows close to the Ground, and each Leaf rises with a Footstalk from the Root, which renders it troublesome to gather in Quantities; but those who use it in Medicine should always be careful to have the true Sort.

The second Sort is a Variety of the first, differing only in the Colour of its Flower. This is found in the North of *England*, and is preserved in some curious Gardens for Variety. These two Sorts are abiding Plants, and multiply very fast by their creeping Roots. They should be planted in a moist shady Border, where they will thrive extremely well.

The third Sort is an abiding Plant, and increases greatly by its creeping Roots, as also from Seed, but this is somewhat tender, and requires Shelter in severe Frosts. This is preserved for Variety, but is not so good as the first for Use.

The fourth Sort is an annual Plant, this was originally brought from

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North *America*, but where it is once sower'd to seed, it will maintain itself in a Garden, and is very hardy, so that at present it is become more common in the *London* Markets than our own Sort.



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PADUS; *vide* Cerasus.

PÆONIA; The Peony.

The Characters are;

It hath a Flower compos'd of several Leaves, which are plac'd orbicularly, and expand in Form of a Rose; out of whose Empalement rises the Pointal, which afterwards becomes a Fruit, in which several little Horns bent downwards, are gather'd, as it were, into a little Head, cover'd with Down, opening lengthwise, containing many globular Seeds.

The Species are;

1. PÆONIA; *folio nigricante, splendido, quæ Mas.* C. B. P. The Male Peony.

2. PÆONIA; *Mas, major, flore incarnato.* *Hort. Eyst.* The greater Male Peony, with a Flesh-colour'd Flower.

3. PÆONIA; *communis vel Fœmina.* C. B. P. The Female Peony.

4. PÆONIA; *Fœmina, flore pleno, rubro, majore.* C. B. P. Female Peony, with a large, double, red Flower.

5. PÆONIA; *pleno flore, rubro, minor.* *J. B.* Peony, with a lesser, double, red Flower.

6. PÆONIA; *flore exalbido, pleno, major.* C. B. P. Greater Peony, with a double, whitish Flower.

7. PÆONIA; *Lusitanica, flore simplici, odorato.* Portugal Peony, with a single sweet-scented Flower.

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There are some other Varieties of these Plants, which are preserv'd in some of the curious *Botanick* Gardens abroad ; but those here mention'd are all the Sorts I have observ'd in the *English* Gardens.

The first of these Sorts is chiefly propagated for the Roots, which are us'd in Medicine ; for the Flowers being single, do not afford near so much Pleasure as those with double Flowers, nor will they abide near so long in Beauty.

The second Sort hath larger single Flowers than the first, but they are of a paler Colour : This is preserv'd by Persons who are curious in collecting the various Kinds of Flowers, but is not so much esteem'd as those which follow.

All the Sorts with double Flowers are preserv'd in curious Gardens for the Beauty of their Flowers ; which, when intermix'd with other large growing Plants in the Borders of large Gardens, do add to the Variety, and the Flowers are very ornamental in Basons or Flower-pots, when plac'd in Rooms.

They are all extremely hardy, and will grow in almost any Soil or Situation, which renders them more valuable, for they will thrive under the Shade of Trees ; and in such Places they will continue much longer in Beauty.

They are propagated by parting their Roots, which multiply very fast. The best Season for transplanting them, is towards the latter End of *August*, or the Beginning of *September* ; for if they are remov'd after their Roots have shot out new Fibres, they seldom flower strong the succeeding Summer.

In parting of these Roots, you should always observe to preserve a Bud upon the Crown of each Off-set, otherwise they will come

to nothing ; nor should you divide the Roots too small, (especially if you have regard to their blowing the following Year) ; for when their Off-sets are weak, they many times don't flower the succeeding Summer, or at least produce but one Flower upon each Root : But where you would multiply them in Quantities, you may divide them as small as you please, provided there be a Bud to each Off-set ; but then they should be planted in a Nursery-bed, for a Season or two, to get Strength, before they are plac'd in the Flower-Garden.

The single Sorts may be propagated from Seeds (which they generally produce in large Quantities, where the Flowers are permitted to remain) ; which should be sown in the Middle of *August* upon a Bed of light fresh Earth, covering them over about half an Inch thick with the same light Earth : The Spring following the Plants will come up ; when they should be carefully clear'd from Weeds, and in very dry Weather refresh'd with Water, which will greatly forward their Growth. In this Bed they should remain two Years before they are transplanted, observing in Autumn, when the Leaves are decay'd, to spread some fresh rich Earth over the Beds about an Inch thick, and constantly to keep them clear from Weeds.

When you transplant them, (which should be done in *September*) you must prepare some Beds of fresh light Earth, which should be dug and well cleans'd from the Roots of all noxious Weeds ; then plant the Roots therein six Inches asunder, and about three Inches deep. In these Beds they may remain until they flower ; after which they may be transplanted where you

design they should grow. It is very probable there may be some Varieties obtain'd from the Seeds of these Plants, as is common in most other Flowers; so that those which produce beautiful Flowers may be plac'd in the Flower-Garden, but such as continue single or ill-colour'd, may be planted in Beds to propagate for medicinal Use.

The *Portugal Peony* may also be propagated either by Seeds or parting of the Roots in the same Manner as the other Sorts, but should have a lighter Soil, and a warmer Situation. The Flowers of this kind are single, but do smell very sweet, which renders it worthy of a Place in every good Garden.

PALIURUS; Christ's Thorn.

The Characters are ;

It hath long sharp Spines; the Flower consists of five Leaves, which expand in Form of a Rose; out of the Flower-cup (which is divided into several Segments) rises the Pointal, which becomes a Fruit shap'd like a Bonnet, having a Shell almost globular, which is divided into three Cells, in each of which is contain'd one roundish Seed.

We have but one Species of this Plant, viz.

PALIURUS; Dod. Christ's Thorn.

This is, by many Persons suppos'd to be the Plant from which the Crown of Thorns which was put upon the Head of our Saviour, was compos'd: The Truth of which is supported by many Travellers of Credit, who affirm, That this is one of the most common Shrubs in the Country of Judea; and from the Pliableness of its Branches, which may be easily wrought into any Figure, it may afford a Probability.

It may be propagated by laying down its tender Branches in the

Spring of the Year; which if carefully supply'd with Water in dry Weather, will take Root in a Year's time, and may then be taken off from the old Plant, and transplanted where it is to remain.

The best Time for transplanting this Plant is in the Beginning of April, just before it begins to shoot, observing to lay some Mulch upon the Ground about their Roots to prevent 'em from drying, as also to refresh them now and then with a little Water until they have taken fresh Root, after which they will require but very little Care. They are very hardy, and will grow to be ten or twelve Feet high, if planted in a dry Soil, and a warm Situation. There is little Beauty in this Plant, but it is kept in Garden as a Curiosity.

PALMA; The Palm-Tree.

The Characters are ;

It hath a single unbranch'd Stalk; the Leaves are dispos'd in a circular Form on the Top, which when they wither, or fall off with Age, new ones always arise out of the Middle of the remaining ones; among which, certain Sheaths or plain Twigs break forth, opening from the Bottom to the Top, very full of Flowers and Clusters of Embryo's.

The Species are ;

1. PALMA; major. C. B. P. The greater Palm or Date-tree.

2. PALMA; minor. C. B. P. The Dwarf Palm, with prickly Footstalks.

3. PALMA; Brasiliensis, prunifera, folio plicatili, seu flabelliformi, caudice squamato. Raii Hist. The Palmetto-tree.

4. PALMA; altissima, non spinosa, fructu pruniformi, minore, racemoso, sparso. Sloan. Cat. The Cabbage-tree.

5. PALMA; *foliorum pediculis spinosis, fructu pruniformi, luteo, oleoso.* Sloan. Cat. The oily Palm-tree.

6. PALMA; *tota spinosa, major, fructu pruniformi.* Sloan. Cat. The great Macaw-tree.

7. PALMA; *humilis, Dactylifera, radice repentissima sobolifera, folio flabelliformi, pedunculo vix spinoso.* Boerb. Ind. The Dwarf Palm, with scarcely any Prickles upon the Foot-stalks.

8. PALMA; *foliis longissimis, pediculis, absque ullo pedunculo ex caudice glabro enatis.* Boerb. Ind. The Dragon-tree.

9. PALMA; *Japonica, spinosis pediculis, polypodii folio.* Par. Bat. The Palm-tree from Japan, with prickly Foot-stalks, and a Leaf like Polypody.

There are several other Sorts of Palms which grow in the East and West-Indies, but those here mention'd are all I have observ'd now growing in the English Gardens.

These Plants may be easily produc'd from the Seeds (provided they are fresh); which should be sown in Pots fill'd with light rich Earth, and plung'd into a Hot-bed of Tanners Bark; which should be kept in a moderate Temper, and the Earth frequently refresh'd with Water.

When the Plants are come up, they should be each planted into a separate small Pot fill'd with the same light rich Earth, and plung'd into a Hot-bed again, observing to refresh 'em with Water, as also to let them have Air in Proportion to the Warmth of the Season, and the Bed in which they are plac'd: During the Summer-time, they should remain in the same Hot-bed, but in August you should let them have a great Share of Air to harden them against the Approach of Win-

ter; for if they are too much forc'd, they will be so tender as not to be preserv'd through the Winter without much Difficulty, especially if you have not the Conveniency of a Bark-Stove to keep them in.

The Beginning of October, you must remove the Plants into the Stove, placing them where they may have a great Share of Heat (these being somewhat tenderer, while young, than after they have acquir'd some Strength); tho' indeed, they may be sometimes preserv'd alive in a cooler Situation, yet their Progress would be so much retarded, as not to recover their Vigour the succeeding Summer: Nor is it worth the Trouble of raising these Plants from Seeds, where a Person has not the Conveniency of a good Stove to forward their Growth; for where this is wanting, they will not grow to any tolerable Size in eight or ten Years.

Whenever these Plants are remov'd, (which should be done once a Year) you must be very careful not to cut or injure their large Roots, which is very hurtful to them, but you should clear off all the small Fibres which are inclinable to Mouldiness; for if these are left on, they will, in time, decay, and hinder the fresh Fibres from coming out, which will greatly retard the Growth of the Plants.

The Soil in which these Plants should be plac'd, must be compos'd in the following Manner, viz. A third Part of light fresh Earth taken from a Pasture-ground; a third Part Sea-sand, and the other Part rotten Dung or Tanners Bark: These should be carefully mix'd, and laid in a Heap three or four Months at least, before it is us'd, but should be often turn'd over to prevent the Growth of Weeds, and to sweeten the Earth.

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You should also observe to allow them Pots proportionable to the Sizes of the Plants, but you must never let them be too large, which is of worse Consequence than if they are too small. During the Summer-season, they should be frequently refresh'd with Water, but you must be careful not to give it in too great Quantities; and in Winter they must be now and then refresh'd, especially if they are plac'd in a warm Stove, otherwise they will require very little Water at that Season.

These Plants are most of them very slow Growers, even in their Native Countries, notwithstanding they do arrive to a great Magnitude; for it has been often observ'd by several of the old Inhabitants of those Countries, that the Plants of some of these Kinds, have not advanced two Feet in Height in twenty Years; so that when they are brought into these Countries, it can't be expected they should advance very fast, especially where there is not due Care taken to preserve them warm in Winter: But however slow of Growth these Plants are in their Native Countries, yet they may be with us greatly forwarded by placing the Pots into a Hot-bed of Tanners Bark; which should be renew'd as often as is necessary, and the Plants always preserv'd therein both Winter and Summer, observing to shift them into larger Pots as they advance in Growth, as also to supply them with Water: In which Management I have had several of them come on very fast; for I observe the Roots of these Plants are very apt to root into the Bark (if their Pots remain a considerable Time without shifting) where they meet

with a gentle Warmth, and the Moisture arising from the Fermentation of the Bark, doth preserve their Fibres plump and vigorous.

The *Date Palm* is of very slow Growth with us, but is easily produc'd from Seeds, taken out of the Fruit, which are brought into *England* in great Plenty; but there are very few of these Plants of any considerable Size at present in the *English* Gardens.

The *Dwarf Palm*, with prickly Footstalks, as also that with few Prickles, are of humble Growth in their Native Countries, seldom rising above four or five Feet high, but do extend their Roots very far, and increase thereby in the same Manner as the common Fern doth, so that the waste Ground which is not cultivated, is over-run with the Plants; the Leaves of which the Inhabitants cut, and send into these Countries to make Flag-Brooms. These grow in *Spain*, *Portugal*, and *Italy*, and are much hardier than any of the other Sorts.

The *Palmetto-Tree* is brought from the *West-Indies*, where it grows to be a very large Tree; the Leaves of which the Inhabitants thatch their Houses withal, for which Purpose they are very useful in those Countries: These Leaves, before they are expanded, are cut, and brought into *England* to make Womens plaited Hats, which were, a few Years since, greatly in Fashion; and the Berries of these Trees were formerly much in Use in *England* for Buttons. These were some of the chief Commodities which the *Bermuda Islands* did afford for Manufactory, but, at present, they are both disus'd in *England*.

The *Cabbage-Tree* is very common in the *Caribbee Islands*, where it grows to a prodigious Height; *Ligon*, in his *History of Barbados*, says, There are some of these Trees above two hundred Feet high, and that it is commonly a hundred Years before they arrive at Maturity enough to produce Fruit: The Leaves of this Tree envelope each other, so that those which are inclos'd, being depriv'd of the Air, are blanch'd, which is the Part the Inhabitants cut for Plait for Hats, &c. and the *Gemma* or young Shoots are pickled, and sent into *England* by the Name of *Cabbage*: But whenever this Part is cut out, the Trees are destroy'd, nor do they rise again from the old Roots, so that there are very few Trees left remaining near Plantations, except for Ornament; for their Stems being exceeding trait, and their Leaves being produc'd very regularly at Top, do afford a most beautiful Prospect; for which Reason the Planters generally spare two or three of them near their Habitations.

The *Oily Palm* grows in great Plenty on the Coast of *Guiney*, as also on *Cape Verd* Island, where they grow as high as the Main-Mast of a Ship: But these Trees have been transplanted to *Jamaica* and *Barbados*, in both which Places they thrive very well. The Inhabitants make an Oil from the Pulp of the Fruit, and draw a Wine from the Body of the Trees, which inebriates; and with the Rind of these Trees they make Mats to lie upon. This Sort will easily rise from Seeds, and if kept warm, will grow much faster than the *Date-Palm*.

The *Macaw-Tree* is very common in the *Caribbee Islands*, where

the *Negroes* pierce the tender Fruit, from whence flows out a pleasant Liquor, which they are very fond of; and the Body of the Tree affords a solid Timber, with which they make *Javelins*, *Arrows*, &c. and is suppos'd by some to be a sort of *Ebony*. This Tree grows very slow, and requires to be kept very warm in Winter.

The *Dragon Tree* is very common in the *Madera's* and the *Canary Islands*, where they grow to be large Trees; from the Bodies of which it is suppos'd the Dragon's Blood doth flow. This Plant arises very easily from the Seeds, and when it has acquir'd some Strength, is pretty hardy.

The *Japan Palm-Tree* is, at present, very rare in *England*, being only in two or three curious Gardens: It will come up from Seeds, if they are fresh, but the Plants must be kept very warm, especially while young, otherwise they will not live through our Winters.

All the Sorts of *Palms* are worthy of being preserv'd by those who are curious in maintaining *Exotick* Plants, for the singular Structure of their Parts and Beauty of their Leaves, which make an agreeable Variety amongst other curious Plants.

PANSIES; *vide* *Viola Tricolor*.

PAPAYER; Poppy.

The Characters are;

The Flower, for the most Part, consists of four Leaves, which are plac'd orbicularly, and expand in Form of a Rose, out of whose Flower-cup (which consists of two Leaves) rises the Pointal, which afterwards becomes a Fruit or Pod, which is oval or oblong, and adorn'd with a little Head; under which, in some Species, is open'd a Series of Holes quite round, into the Cavity of the Fruit,

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Fruit, which is defended lengthwise with various Leaves or Plates, to which a great Number of very small Seeds adhere.

The Species are;

1. PAPAVER; *hortsense, semine albo, sativum Dioscoridis, album Plinio*. C. B. P. Garden Poppy, with white Seeds.

2. PAPAVER; *hortense, semine nigro, sylvestre Dioscoridis, nigrum Plinio*. C. B. P. Garden Poppy, with black Seeds.

3. PAPAVER; *flore pleno, rubrum*. Hort. Eyst. Double Red Poppy.

4. PAPAVER; *flore pleno, album*. C. B. P. Double White Poppy.

5. PAPAVER; *flore pleno, purpureo*. C. B. P. Double Purple Poppy.

6. PAPAVER; *pleno flore, nigrum*. C. B. P. Black Double-flower'd Poppy.

7. PAPAVER; *laciniatis floribus*. C. B. P. Poppy with jagged Flowers.

8. PAPAVER; *flore pleno laciniato, eleganter firiato*. Hort. Ed. Double jagged Poppy, with beautiful strip'd Flowers.

9. PAPAVER; *Oriente, hirsutissimum, flore magno*. T. Cor. Very rough Oriental Poppy, with a large Flower.

10. PAPAVER; *erraticum, majus ποικίλς Dioscoridi, Plinio, Theophrasto*. C. B. P. Red Poppy, or Corn Rose.

11. PAPAVER; *erraticum, majus, foliis florum variegatis*. H. R. Par. Great Wild Poppy, whose Flower-leaves are variegated.

12. PAPAVER; *erraticum, flore pleno*. C. B. P. Double Wild Poppy, commonly called, The Dwarf Poppy.

13. PAPAVER; *erraticum, flore pleno miniato*. H. R. Par. Wild Poppy, with a double Vermilion-colour'd Flower.

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14. PAPAVER; *erraticum, flore pleno igneo*. H. R. Par. Wild Poppy, with a double fiery Flower.

15. PAPAVER; *erraticum, flore pleno igneo, marginibus candidis*. H. L. Wild Poppy, with a double fiery Flower, edg'd with white.

16. PAPAVER; *erraticum, flore pleno Phœnicio, unguibus albis*. H. R. Par. Wild Poppy, with a double purple Flower and white Bottom.

17. PAPAVER; *erraticum, minus*. C. B. P. Lesser Wild Poppy, or Dwarf Poppy.

18. PAPAVER; *luteum perenne, laciniato folio, Cambro-Britannicum*. Raii Syn. Welsh, or Yellow Wild Bastard Poppy.

The first Sort is cultivated in Gardens for medicinal Use, and is by some suppos'd to be the Plant from whence the *Opium* is procured: Of this there are several Varieties, which chiefly differ in the Colour of their Flowers; but they are no more than feminal Variations, and therefore not worth enumerating in this Place.

The *Black Poppy* grows wild in divers Parts of *England*: The Seeds of this Kind are sold to feed Birds, by the Name of *Maw Seed*. Of this Sort there is a vast Number of Varieties some of which produce exceeding large Double Flowers of various Colours, and beautifully strip'd: but these are apt to vary from Seed; therefore you should never save the Seeds of any but such as are very double, and well-colour'd, from which you may always expect to have good Sorts produc'd.

The *Oriental Poppy* is an abiding Plant, which produces a large single Flower in *May*, which makes a beautiful Appearance: This may be

be propagated from Seeds, or by parting their Roots; the best Time to transplant them is at the Beginning of *March*: This must have a light Soil, and a warm Situation.

The *Red Poppy*, or *Corn Rose*, is never propagated in Gardens, but is very common upon chalky dry Soils in almost every Part of *England*, where the Plants come up amongst the Corn, and are very troublesome: The Flowers of this Kind are brought into the Markets for Medicinal Use. There are many Varieties of this Plant with double Flowers, which are cultivated in the Flower Garden, but especially the Dwarf Sort, of which there are some with very double Flowers, which are beautifully edged with white; these are by many Persons sown for Edgings to the large Borders of the Pleasure-Garden; tho' I think them no ways proper for this, since their Flowers are but of a short Duration; and the Plants, when their Seeds are perfected, do immediately decay, so that they appear unsightly. Besides, where they grow very close, the Flowers are generally small: but if they are sown in Patches upon the Borders, and when the Plants come up, are thinned out, so as to leave but three or four in each Place, they will flower very well, and look very beautifully.

All the Sorts of *Poppies* should be sown in *Autumn*; (for when they are sown in the Spring, the Plants have not Time enough to get Strength before the hot Weather cautes them to run up to flower; so that their Flowers are never so large or double as those sown in the *Autumn*.) When the Plants come up, they should be carefully clear'd from Weeds, which is all the Culture they require (ex-

cept to pull them up where they are too thick;) for they thrive better when they are suffer'd to remain where they were sown, than if they were transplanted: but you should observe to let them have Room in Proportion to the Growth of the Plants. This Sort first mention'd grows very large, and tall, therefore should be not closer than eight or ten Inches. But the *Black* Sort, may stand somewhat nearer; tho' this appears handsomer when the Plants stand single; therefore it is the better way to scatter the Seeds of those which have beautiful Flowers very thin over the Borders of the Flower-Garden: and when the Plants come up they may be pull'd out where they are not well situated, leaving here and there a Plant, as the other Flowers in the Borders will admit, where, at the Season of their Flowering, they will make a pretty Variety amongst the Flowers: but they are of short Duration; and having an ill Scent, they are less esteem'd of late Years, since the Plenty of other more valuable Flowers.

PAPAVER CORNICULATUM; *vide* Glaucium.

PAPAVER SPINOSUM; *vide* Argemone.

PAPAYA; Papaw Tree.

The Characters are;

It hath a simple Stalk: The Flowers are Male and Female in different Plants: The Male Flowers (which are barren) are tubulous, consisting of one Leaf, and expand in the Form of a Star: The Female Flowers consist of several Leaves, which expand in Form of a Rose, out of whose Flower-cup rises the Pointal, which afterwards becomes a fleshy Fruit, shaped like a Cucumber or Melon, containing many small, oblong, serrow'd Seeds.

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The Species are ;

1. PAPAYA; *fructu Melopeponis effigie. Plum.* The Female Papaw Tree bearing a Fruit like the *Melo-pepo*.

2. PAPAYA; *fructu maximo, Peponis effigie. Plum.* The Female Papaw Tree, bearing a Fruit like the *Pumkin*.

3. PAPAYA; *mas. Boerh. Ind.* The Male Papaw Tree.

These Plants are very common in the *Caribbee* Islands, where they arise from Seeds, and will produce Fruit in eight or ten Months after.

The Fruit is cut before it is ripe, and afterwards sliced and soak'd in Water until the milky Juice be out, and then boil'd and eat as *Turnips*, or bak'd as *Apples*; and when ripe, it is eaten as *Melons* with Pepper and Sugar, by the Inhabitants of those Countries.

The Flowers of the Male Sort, as also the Fruit of the Female, are preserv'd and sent over as a Sweetmeat to *Europe*, and are said to be very cooling and cordial.

In *England* these Plants are preserv'd as Curiosities, by such as delight in Exoticks: They are easily rais'd from the Seeds (which are generally brought from the *West-Indies* in Plenty every Year) which should be sown upon a Hot-bed in *February* or *March*; and when the Plants are come up, they should be planted each in a separate small Pot fill'd with rich light Earth, and plung'd into a moderate Hot-bed of *Tanners Bark*, observing to water and shade them until they have taken Root; after which, you should let 'em have Air in Proportion to the Warmth of the Season, by raising the Glasses with Bricks, &c. and you must often refresh them with Water.

When the Plants have grown so as to fill the Pots with their Roots, they must be shaken out of them, preserving the Earth as intire as possible to their Roots, and placed in larger Pots, which should be fill'd with the same light Earth, and plung'd again into the Hot-bed, observing to give them Air and Water as was before directed: And thus from Time to Time, as the Plants increase their Stature, you should shift them into larger Pots, which will cause them to be very strong; and if you keep 'em in the Hot-bed all the Summer, and give them due Attendance, they will rise to six or seven Feet high before Winter.

In *October* they should be placed into a new Hot-bed in the *Bark Stove* with other tender Exotick Plants, where, during the Winter-season, they must be carefully look'd after, to water and cleanse them well from Vermin and Filth; and the Stove should be kept nearly to the *Anana's* Heat, as mark'd on *Mr. Fowler's Thermometers*, in which they will thrive and retain their beautiful large Leaves all the Winter: And the Male Sort will often continue to produce fresh Flowers all that Season, provided you do not keep 'em too dry. The Second Year the Female Sort will flower, and, if duly attended, will perfect the Fruit the following Spring.

These Plants make a very beautiful Appearance (when grown large) amongst other curious Exoticks in the Stove, and deserve a Place in every good Collection of rare Plants.

PARIETARIA; Pellitory.

The Characters are ;

It hath an apetalous Flower, whose Flower-cup is divided into four Parts, which

which is sometimes Bell-shap'd, and at other times shap'd like a Funnel, with four Stamina (or Threads) surrounding the Pointal; which Pointal becomes for the most part, an oblong Seed surrounded by the Flower-cup: To which may be added, The Flowers are produced from the Wings of the Leaves.

The Species are;

1. *PARIETARIA; officinarum, & Dioscoridos. C. B. P.* Pellitory of the Wall.

2. *PARIETARIA; minor, Ocymi folio. C. B. P.* Lesser Pellitory, with a Basil Leaf.

The first of these Plants is suppos'd to be the true Sort which is recommended by *Dioscorides* for medicinal Use: This is the most common in *Germany*, and some other Countries; but is very different from that which grows wild in *England*, which is more like the second Sort, tho' I can't positively affirm it to be the very same.

These Plants grow wild upon old Walls and Buildings in great Plenty; but may be cultivated by sowing their Seeds in *Autumn* upon a dry gravelly, or stony Soil, where they will thrive much better than in a richer Soil, and are preferable for Use to those which grow in a moist rich Ground; for tho' in such Places they will often be very rank, yet they are not near so strongly scented.

PARSLEY; vide Apium.

PARSNIP; vide Pastinaca.

PARTERRE, is a level Division of Ground, which, for the most part, faces the South and best Front of an House, and is generally furnish'd with Greens, Flowers, &c.

There are several Sorts of *Parterres*, as *Bowling-green*, or *Plain*, *Parterres* of *Embroidery*, &c.

Plain Parterres are more beautiful in *England* than in any other Countries, by reason of the Excellency of our Turf, and that Decency and unaffected Simplicity that it affords to the Eye of the Spectator.

Others are cut into Shell and Scroll-work, with Sand-Alleys between them, which are the finest *Parterre* Works esteemed in *England*.

As to the general Proportion of *Parterres* an Oblong or long Square is accounted the most proper Figure for a *Parterre*; because by the Rules of *Perspective*, or the natural Declension of the visual Rays in *Opticks*, a long Square sinks almost to a Square, and an exact Square appears much less than it really is; therefore a *Parterre* should not be less than twice as long as it is broad; twice and a half is accounted a very good Proportion, and it is very rare that three times is exceeded.

As to the Breadth of a *Parterre*, it is to take its Dimensions from the Breadth of the Front of the House: If it be not above an hundred Feet, 'twill be too narrow; and if the Front be two hundred Feet, the *Parterre* must be of the same Breadth.

Some do not approve of making *Parterrees* very broad, because it makes 'em appear too short; when nothing is more pleasing to the Eye, than a contracted, regular Conduct and View, as soon as a Person goes out of an House or Building: And a forward, direct View is the best, whether it be either *Parterre* or *Lawn*, or any other open Space, either two, three, or four-fold to the Width: And for that Reason, those Designs may

just

justly be disapprov'd by which the Nobleness of the View is marred at the immediate Entrance into the Garden, the Angle of Light being broken and confus'd.

The making of *Parterres* too large, causes a great Expence, and at the same time occasions a Diminution of Wood, which is consequently the most valuable Part of a Garden.

There should be a Terrass Walk on each Side the *Parterre*, for an Elevation proper for View; and therefore there should never be the Flat of a *Parterre* between Terrass Walk and Terrass Walk above three hundred Feet; nor can it well be made less than an hundred and forty; and then the Length, at twice and a half the Breadth, would be three hundred and fifty Feet, which some account a handsome Proportion.

As to the Adorning and Furnishing these *Parterres*, whether it be Plain, or with Embroidery, that depends much upon the Form of them, and therefore must be left to the Judgment and Fancy of the Designer.

PASQUE FLOWER; *vide* Pulsatilla.

PASSION FLOWER; *vide* Granadilla.

PASTINACA; Parsnip.

The Characters are;

It is a Plant with rose and umbellated Flowers, consisting of many Petals or Leaves placed orbicularly, and resting on the Empalement, which turns to a Fruit, compos'd of two Seeds, which are oval, large, thin, border'd, and generally casting off their Cover: To these Marks must be added, That the Leaves are winged and large.

The Species are;

1. PASTINACA; *sativa, latifolia*. C. B. P. Garden Parsnip.

2. PASTINACA; *sylvestris, latifolia*. C. B. P. Wild Parsnip.

3. PASTINACA; *sylvestris, alissima*. Tourn. The tallest Wild Parsnip, or Hercules's All-heal.

The first Sort grows wild in divers Parts of *England*, upon the Sides of dry Banks, and is by some affirm'd to be no ways different from the second Sort, but by Cultivation: Which is a very great Mistake; for I have sown the Seeds of both Sorts in the same Bed for several Years, but could not find that either Sort alter'd in the least, the first still retaining the same Smoothness in the Leaf, and the same pale Colour, and Largeness of Root; as did the second its usual Roughness, dark-green Colour, and slender Roots: Nor do I believe either Sort will alter, if they were cultivated ever-so long.

The Root and Seed of the second Sort is sometimes used in Medicine; but it is seldom cultivated in Gardens, the Markets being supply'd from the Fields: yet the Druggists commonly sell the Seeds of the Garden Kind for it, which they may purchase at an easy Price, when it is too old to grow.

The first Sort is cultivated in Kitchen-Gardens, the Roots of which are large, sweet, and accounted very nourishing. They are propagated by Seeds, which should be sown in *February*, or *March*, in a rich mellow Soil, which must be well dug, that the Roots may run downward; their greatest Excellency being the Length and Bigness of the Roots: These may be sown alone, or with *Carrots*, as is practis'd by the Kitchen-Gardeners

near

near *London*, some of whom do also mix *Leeks*, *Onions*, and *Lettuce* with their *Parfnips*: But this I think very wrong; for it is not possible that so many different Sorts can thrive well together, except they are allowed a considerable Distance; and if so, it will be equally the same to sow the different Sorts separate. However, *Carrots* and *Parfnips* may be sown together very well, especially where the *Carrots* are design'd to be drawn off young; because the *Parfnips* do generally spread most towards the latter-end of Summer, which is after the *Carrots* are gone; so that there may be a double Crop upon the same Ground.

When the Plants are come up, you should hoe them out, leaving them about ten Inches or a Foot asunder; observing at the same time to cut up all the Weeds, which, if permitted to grow, would soon over-bear the Plants, and choak 'em: This must be repeated three or four times in the Spring, according as you find the Weeds grow: but in the latter-part of Summer, when the Plants are so strong as to cover the Ground, they will prevent the Growth of Weeds; so that after that Season they will require no farther Care.

When the Leaves begin to decay, the Roots may be dug up for Use, before which time they are seldom well-tasted; nor are they good for much late in the Spring, after they are shot out again: so that those who would preserve these Roots for Spring Use, should dig them up in the Beginning of *February*, and bury them in Sand, in a dry Place, where they will remain good until the middle of *April*, or later.

If you intend to save the Seeds of this Plant, you should make choice of some of the longest, straightest, and largest Roots, which should be planted about two Feet asunder, in some Places where they may be defended from the strong South and West Winds; for the Stems of these Plants do commonly grow to a great Height, and are very subject to be broken by strong Winds, if expos'd thereto: They should be constantly kept clear from Weeds; and if the Season should prove very dry, you must give them some Water twice a Week, which will cause 'em to produce a greater Quantity of Seeds; which will be much stronger than if they were wholly neglected. Toward the latter End of *August*, or the Beginning of *September*, the Seeds will be ripe, at which Time you should carefully cut off the Heads, and spread them upon a coarse Cloth for two or three Days to dry; after which, the Seeds should be beaten off, and put up for Use: But you must never trust to these Seeds after they are a Year old, for they will seldom grow beyond that Age.

The third Sort is preserv'd in Botanick Gardens, amongst some other Sorts of these Plants, for Variety, but is seldom propagated for Use: This is by many suppos'd to be the *Panaces Syriacum* of the Antients, from whence the *Opopanax* is taken, which is suppos'd to be the concrete Juice of this Plant: As is the *Afa fetida*, suppos'd to be the concrete Juice of one Species of this Plant.

All these Sorts may be cultivated by sowing their Seeds early in the Spring, or in Autumn soon after they are ripe, and should be ma-

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nag'd as the Garden Kind, with this Difference, *viz.* the Plants should not stand nearer than two Feet and an half Distance; but then they need not be reduced to this until the succeeding Spring: These Roots are perennial, and may be removed with Safety at any time after their Leaves are decay'd: They seldom produce Seeds until the third Year after they are sown.

PAVIA; The Scarlet Flowering Horse-Chestnut; *vulgô.*

The Characters are;

The Leaves are like those of the Horse-Chestnut: The Flower is of an anomalous Figure, and consists of five Leaves, which are so dispos'd as to resemble a Lip Flower; the two uppermost are united, and form a Sort of Helmet; the three undermost appear somewhat like a Mouth gaping: These Flowers are dispos'd into a Spike, and are of a beautiful scarlet Colour: The Ovary, which rises in the Centre of the Flower-cup, afterwards becomes an oblong pyramidal Fruit, divided into three Cells, in each of which is lodged one globular Seed.

There is but one Species of this Tree, *viz.*

PAVIA; Boerh. Ind. The Scarlet Flowering Horse-Chestnut; *vulgô.*

This Tree is a Native of America, from whence the Seeds were first brought into Europe: It grows in great Plenty in the Woods of South Carolina, but is very hardy, enduring the severest Cold of our Climate in the open Air.

It may be propagated by sowing the Seeds in the Spring, upon a warm Border of light sandy Earth; and when the Plants come up, they should be carefully clear'd from Weeds: but they must not be transplanted until the Spring following, when they should be removed just

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before they begin to shoot, and placed either in a Nursery to be train'd up, or else into the Places where they are to remain; observing, if the Season be dry, to water 'em until they have taken Root, as also to lay some Mulch upon the Surface of the Ground, to prevent the Sun and Wind from drying it too fast: And as the Plants advance, so the lateral Branches should be pruned off, in order to reduce 'em to regular Stems.

You must also observe to dig the Ground about their Roots every Spring, that it may be loose, to admit the Fibres of the Roots, which, while young, are too tender to penetrate the Ground, if it be very hard.

With this Management the Plants will greatly advance, and in four or five Years will produce Flowers and Fruits, which in warm Seasons are perfected enough to grow, so that the Plants may be multiply'd therefrom very fast.

This Tree may also be propagated by budding or inarching it upon the common Horse-Chestnut: but the Trees thus rais'd will never arrive to near the Size of those which are produced from Seeds; nor will they grow near so fast.

Such of these Trees as are rais'd from Seeds, if planted in a good Soil, will grow to be twenty-five or thirty Feet high, and produce great Numbers of beautiful red Flowers, which commonly appear the Beginning of June; at which Season it makes a beautiful Appearance amongst other hardy Trees.

PEACH; *vide* Persica.

PEAR; *vide* Pyrus.

PEASE; *vide* Pisum.

PEASE EVERLASTING; *vide* Lathyrus.

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PELLITORY OF THE WALL, *vide* Parietaria.

PENNY ROYAL; *vide* Pulegium.

PENTAPHYLLOIDES; Bastard Cinquefoil.

The *Characters* are;

It hath pennated Leaves, consisting of several Lobes placed along the middle Rib, and terminated by an odd Lobe, in which it differs from the Cinquefoil; the Flower consists of five Leaves, which expand in Form of a Rose, and are succeeded by hemispherical Seed-Vessels, which contain many small Seeds.

The *Species* are;

1. PENTAPHYLLOIDES; *Argentina dicta. Raii Syn.* Wild Tansey or Silver-Weed.

2. PENTAPHYLLOIDES; *fruticulosum. Raii Syn.* Shrub Cinque-foil.

The first of these Plants is very common in moist Meadows, and by the Sides of Ditches in divers Parts of England, and is rarely cultivated in Gardens, for the Branches of these Plants trail upon the Ground, and take Root at their Joints, so that in a short time, a few of these Plants would overrun a whole Garden. This Herb is used in Medicine; for which Purpose it is gather'd in the Fields, and brought to Market by such Persons who make it their Business to gather wild Plants.

The second Sort grows to be four or five Feet high, and may be train'd to a regular Head. This is a very proper Shrub to intermix with others of the same Growth, in small Wilderness Quarters, where it will make a pretty Diversity, and continues flowering a long time.

This is propagated either by

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Suckers or Layers, which may be obtain'd in great Plenty, for it generally produces a great Number of Shoots from the Bottom, which when they come out near the Ground, may be earthed up or laid down therein; and if they are water'd in dry Weather, will take Root in a short time, when they may be taken off, and transplanted where they are to remain. The best Time to transplant them is in October or February: They delight in a moist Soil, though they will grow in almost any Soil or Situation.

There are several other Species of this Plant, which are preserv'd in several curious Botanick Gardens for Variety; but as they are Plants of little Beauty or Use, so I shall not enumerate them here.

PEONY; *vide* Pæony.

PEPO; Pumpkin.

The *Characters* are;

The Flower consists of one Leaf, which is Bell-shaped, expanded at the Top, and cut into several Segments: Of these Flowers some are Male, and some are Female, as in the Cucumbers and Melons. The Female Flowers grow upon the Top of the Embryo, which afterward becomes an oblong or round fleshy Fruit, having sometimes a hard, rugged, or uneven Rind, with Knobs and Furrows, and is often divided into three Parts, inclosing flat Seeds, that are edged or rimmed about as it were with a Ring, and fix'd to a spongy Placenta.

The *Species* are;

1. PEPO; *oblongus. C. B. P.* The greater oblong Pumpkin.

2. PEPO; *vulgaris. Raii Hist.* The common Pumpkin.

3. PEPO; *rotundus, Aurantii forma. C. B. P.* Orange-shap'd Pumpkin.

4. PEPO;

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4. PEPO; *fructu parvo, pyriformi.*
Tourn. Pear-shap'd Pumpkin.

5. PEPO; *fructu minimo, sphaerico.*
Tourn. Pumpkin, with a very small spherical Fruit.

There are several other Varieties of these Fruits, which seem to be only seminal Variations, so that it would be needless to mention them all in this Place, since the Seeds taken from any one of the Sorts will not continue the same three Years together, if sown in the same Garden, as I have several times experienc'd.

The two first Sorts are by some Persons cultivated for their Fruit; which when ripe, they cut open, and take out the Seeds, and then slice some Apples into the Shell, mixing them with the Pulp of the Fruit and Sugar: This they bake in an Oven, and afterwards eat it spread upon Bread; but it is too strong for Persons of weak Stomachs, and only proper for Country People who use much Exercise.

The Seeds of these Plants are us'd as one of the four cold Seeds in Medicine.

The other Sorts are preserv'd by some curious Persons for Variety, but are of little Use, being good for nothing when grown old; but while they are very small, some Persons gather and boil them, like Turnips, or as they do the Squashes, and are very fond of them.

These may be propagated in the same manner as was directed for the Gourds, to which I shall refer the Reader, to avoid Repetition.

PERICLYMENUM; Trumpet Honeyfuckle; *vulgô.*

The Characters are;

It hath the whole Appearance of the Honeyfuckle (from which it differs in the Shape of the Flower) which

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is tubulose or Bell-shap'd, and expands at the Top, where it is cut into several almost equal Segments.

We have but one Species of this Plant at present, *viz.*

PERICLYMENUM, *Virginianum, sempervirens & florens.* H. L. Virginian Scarlet Honeyfuckle; *vulgô.*

This Shrub is greatly esteem'd for the Beauty of its Flowers, which are of a fine Scarlet-colour; the Leaves continue all the Year green, and it continues flowering most Part of the Summer.

It may be propagated by laying down the tender Branches in the Spring, observing in dry Weather to refresh them with Water, which will greatly facilitate their Rooting: The Spring following they will be fit to transplant; when they should be cut off from the old Plants, and carefully taken up, so as not to injure their Roots. The best Time to remove them is in March, just before they shoot out; but you must observe, if the Season should prove dry, to water them, and lay a little Mulch upon the Surface of the Ground near their Stems, to prevent the Ground from drying too fast. It should have a strong Soil, and be expos'd to the South-East Sun, but must have the Assistance of a Wall or Pale to support the Branches, otherwise they will trail upon the Ground.

This Plant, although a Native of Virginia, yet if planted in a clear Air, will endure the severest Cold of our Climate very well, but it will not thrive in close Places, or too near the City, the Smoak arising from the Sea-coal Fires being very pernicious to it.

PERIPLUCA; Virginian Silk; *vulgô.*

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The Characters are ;

The Flower consists of one Leaf, which is more expanded at the Brim than those of the Apocynum; the Pointal which rises in the Center of the Flower-cup, becomes a Fruit so nearly resembling that of the Apocynum, as not to be distinguish'd therefrom but by very curious Observers; to which should be added, it hath climbing Stalks.

The Species are **RADCLIFFE**

1. PERIPLOCA; *foliis oblongis*. Tourn. Periploca, with oblong Leaves.

2. PERIPLOCA; *Monspeliaca, foliis rotundioribus*. Tourn. Periploca of Montpellier, with rounder Leaves.

There are several other Species of this Plant which are Natives of America; but the two here mentioned are all I have observ'd in the English Gardens, which will abide in the open Air: The first is very common in England, but the latter is, at present, pretty rare.

These may be propagated by laying down their Branches in the Spring, which will take Root in a Year's time; when they may be taken off, and transplanted where they are to remain: Which should be either against a lofty Wall or Building, or else plac'd in Wilderness Quarters amongst other tall Flowering-trees, where they should be supported by strong Poles, about which these Plants will twine and rise to a great Height. These two Sorts are hardy, and will endure the Cold of our Winters very well, provided they are planted in a dry Soil.

They produce their Flowers in June and July, but do rarely perfect their Seeds in England. Their Flowers are not very beautiful, but, for their Oddness, may have

a Place amongst other hardy Shrubs in every good Garden.

PERIWINKLE; *vide* Pervinca.

PERSICA; The Peach-Tree.

The Characters are;

It hath long narrow Leaves; the Flower consists of several Leaves, which are plac'd in a circular Order, and expand in Form of a Rose; the Pointal, which rises from the Center of the Flower-cup, becomes a round-

ish, fleshy Fruit, having a longitudinal Furrow, inclosing a rough, rugged Stone, which is deeply furrow'd, by which it is distinguish'd from the Almond.

There is a great Variety of these Trees, which are cultivated in the Gardens of those who are curious in collecting the several Sorts of Fruit in the different Parts of Europe: I shall therefore first beg Leave to mention two or three Sorts which are cultivated for the Beauty of their Flowers; after which, I shall enumerate the several Sorts of good Fruit which have come to my Knowledge:

1. PERSICA; *vulgaris, flore pleno*. Tourn. Peach-Tree, with double Flowers.

2. PERSICA; *Africana, nana, flore incarnato, simplici*. Tourn. Dwarf-Almond, with single Flowers; *vulgô*.

3. PERSICA; *Africana, nana, flore incarnato, pleno*. Tourn. Double-flowering Dwarf-Almond; *vulgô*.

The first of these Trees is a very great Ornament in a Garden early in the Spring, the Flowers being very large, double, and of a beautiful Red or Purple-colour. This may be planted in Standards, and if intermix'd amongst other Flowering-trees of the same Growth, makes a very agreeable Variety: Or it may be planted against the Walls

Walls of the Pleasure-Garden, where the beautiful Appearance of its Flowers early in the Spring will be more acceptable in such Places than the choicest Fruits, which must be expos'd to Servants, and others, so that they seldom can be preserv'd in large Families until they are ripe. This Tree may be propagated by budding it on the *Almond* or *Plumb* Stocks, in the same manner as the other Sort of *Peaches*, and should be planted in a good fresh Soil that is not over moist.

The other two Sorts are of humbler Growth, seldom rising above five Feet high: These may be budded upon *Almond*-Stocks, or propagated by *Layers*; they will also take upon *Plumb*-Stocks; but they are very apt to canker, after they have stood four or five Years upon those Stocks, especially that with double Flowers, which is tenderer than the other.

These Shrubs make a very agreeable Variety amongst low Flowering-trees, in small Wilderness Quarters. The single Sort flowers in the Beginning of *April*, and the double is commonly a Fortnight later.

I shall now proceed to mention the several Sorts of good *Peaches* which have come to my Knowledge; and though, perhaps, a greater Number of Sorts may be found in some Catalogues of Fruits, yet I doubt whether many of them are not the same Kinds call'd by different Names: For, in order to determine the various Sorts, it is necessary to observe the Shape and Size of the Flowers, as well as the different Parts of the Fruit; for this does sometimes determine the Kind; When the Fruit alone is not sufficient: Besides; there is a vast

Difference in the Size and Flavour of the same *Peach*, when planted on different Soils and Aspects; so that 'tis almost impossible for a Person, though very conversant with these Fruits, to distinguish them, when brought from various Gardens.

The present Confusion of the Names of Fruits hath been many times owing to the bringing over Trees from *France*; for the Persons who are generally employed to bring over those Trees for Sales, are intirely ignorant of their various Sorts, and do themselves take 'em upon Trust from the Persons, who make it their Business to propagate great Quantities to supply the Markets of *France*, whither they are brought in Waggon, and sold out in Parcels to those Persons who bring them into *England*. It also happens many times, that if they are receiv'd by right Names, these, in Length of Time, are lost, or the Trees come into the Possession of other Persons, who not knowing the true Name of the Fruit, do often give them new Names, whereby there is such a Confusion in the Names of Fruit, as is impossible to rectify: And hence some Persons have suppos'd a much greater Variety of *Peaches* than there is in Reality; tho' as the greatest Part of these have been obtain'd from Seeds, so their Varieties may be multiply'd annually until there be no End of the Sorts. However, I shall content my self with enumerating the principal Sorts now known in *England*, which are sufficient for any Gentleman to make a Collection to continue through the whole Season of Fruit.

1. The *White Nutmeg* (call'd by the *French*, *Petite-Avant-Pesche*) is the first ripe *Peach*: Its Juice is mus-

ky, if well expos'd, and is ripe the Beginning of *July*: It is a great Bearer, and if planted in two different Aspects, the Fruit may be continu'd three Weeks in Perfection, otherwise 'tis soon gone after it is ripe, as is the Case with most other Summer Fruits. This should have a *South-East* and *South-West* Aspect.

2. The *Red Nutmeg* (or *La Pesche de Troy*) is ripe towards the End of *July*. This is a great Bearer, and if well expos'd, is an extraordinary good Fruit: It is somewhat larger than the White, and is of a beautiful red Colour towards the Sun.

3. The *Yellow Alberge* ripens soon after the *Red Nutmeg*, but is not esteem'd so good a Fruit: It is generally a good Bearer; the Flesh is yellow within; and for Variety, there may be one Tree planted where there is Room enough.

4. The *Red Magdalaine* (or *Magdalene Rouge*) is a middle-siz'd Fruit; the Flesh or Pulp is very delicious; it parts from the Stone where the Flesh is red, and the Tree is a good Bearer. This ripens the Beginning of *August*, and should have a *South* or *South-East* Aspect.

5. The *White Magdalaine* (or *Magdalene Blanche*) is a fine large Fruit, when planted in a good Soil; the Flesh is white, except near the Stone, where it is of a reddish Colour; it is very full of a rich viny Juice, and easily melts in the Mouth; it is a great Bearer, but is very subject to drop its Fruit, and is often invaded by Insects, as are many other Sorts of rich *Peaches*. This ripens the Beginning of *August*.

6. The *Mignonne* (or, as it is commonly call'd, *Minion*) *Peach*, is an excellent fine Fruit; the Side

next the Sun is of a beautiful red Colour, as is also the Flesh next the Stone; the Pulp is very firm, and full of a rich Juice; it is a plentiful Bearer, and ripens the Beginning of *August*.

7. The *Italian Peach* (or *Pesche d'Italié*) is of an oval Shape somewhat pointed; the Flesh is very delicate, and full of Juice, and red towards the Stone, which is flat, and sharp pointed; it is a good Bearer, a hardy *Peach*, and ripens the Middle of *August*.

8. The *Early Newington* (or *Smith's Newington*) is a very good *Peach*; the Pulp is firm, of a rich sugary Flavour, and closely adheres to the Stone: This is very red on the Side next the Sun, as is also the Flesh near the Stone. This ripens the Beginning of *August*.

9. *Les Drufelles* (or *Drusel Peach*) is of an oval Shape; the Skin is of a soft purple Colour next the Sun; the Flesh is red, and dry, but of a very agreeable Flavour. This ripens the End of *August*.

10. The *Noblest* (or *Noblest*) is a fair large *Peach*; the Flesh comes clean from the Stone; the Pulp is melting, and full of a delicious Juice, and is of a reddish Colour, next the Stone: It is a good Bearer, and ripens the Beginning of *August*.

11. *La Chevreuse* (or *Belle Chevreuse*) is of a bright red Colour next the Sun; the Fruit is longish, and pretty large; the Pulp is full of a delicate sweet Juice, and ripens the latter End of *August*.

12. The *Chancellor* (or *Pesche Chanceliere*) was rais'd from the Stone of the *Chevreuse Peach*, in the Gardens of the *Chancellor Seguire* in *France*, from whence it had its Name. It is a very large fair Fruit, full of a delicate sugary Juice, and is esteem'd amongst

amongst the best Sort of *Peaches* in *France*. It ripens the End of *August*.

13. The *Montauban* is a fair handsome *Peach*, of a deep red Colour on the Side next the Sun, but of a pale Green next the Wall; the Flesh is melting, and parts from the Stone, where it is of a faint red Colour. This is a very good Bearer, and ripens the Beginning of *August*.

14. The *Royal George Peach*. This is a middle-siz'd Fruit, pretty round, with a deep Furrow running lengthwise: It is of a dark red Colour on the Side next the Sun, and of a paler Colour next the Wall; the Skin is cover'd over with a downy Substance, and is full of red Spots; the Flesh is melting, of a delicate Flavour, and of a yellowish Cast; the Stone is large and of a deep red Colour. This ripens the latter End of *August*.

15. The *Nivette Peach* is of a middling Size, of an oval or oblong Shape, a little compressed on the Sides, it is of a yellowish Colour, marbled with Red, and cover'd with a soft, downy Substance; the Flesh is soft, melting, of a yellow Colour, and parts from the Stone; The Juice is very rich: It ripens the Beginning of *September*.

16. The *Violet Peach* (or *Pesche Violette*) is somewhat long, of a middle Size; the Pulp is melting, and its Juice is of a vinous Flavour. This is, by the *French*, esteem'd the Queen of Fruits. It ripens towards the End of *August*, and is a plentiful Bearer.

17. The *Portugal Peach* is a fair, large, beautiful Fruit, of a deep red Colour towards the Sun, which fades off to a light Green next the Wall; the Skin has a soft Down upon it, and is pretty full of red Spots; the Flesh is very firm, of a

rich vinous Flavour, and adheres closely to the Stone, which is small for the Size of the Fruit, but very rough. This ripens the Beginning of *September*.

18. The *Purple Alberge* (or *La Pesche Alberge Violette*) is a middle-siz'd Fruit, of a dark Purple or Violet Colour on the Side next the Sun, which goes off to a dark Red next the Wall: The Flesh is yellow, and parts from the Stone, where it is red; it is full of a rich vinous Juice, and ripens towards the End of *August*.

19. The *Old Newington* is esteem'd one of the best *Peaches* in *England*; it is a large fair Fruit, of a lively red Colour next the Sun, which goes off to a yellowish Green next the Wall; the Flesh is firm, and closely adheres to the Stone; it is full of a delicious rich Juice, and of a deep red next the Stone. This is accounted an indifferent Bearer, which is wholly owing to its Management in Pruning, for I have had it bear extremely well in a Standard, and the Fruit has been deeper colour'd, and of richer Flavour than those against Walls.

20. *La Teton de Venus* (or *Venus's Breast*) is a middle-siz'd Fruit, rather long than round, having a very deep Sulcus or Furrow, which divides it like a double Fruit; the two Sides of which rise somewhat like a Woman's Breast, from whence it had its Name; the Flesh is very white, with a little Blush of Red next the Sun; it is melting, and full of a high-flavour'd Juice. This ripens the latter End of *August*.

21. *La Pesche Pourprée* (or *Purple Peach*) is a fair round Fruit, of a dark red Colour next the Sun, which goes off to a paler Red next the Wall: The Flesh next the Stone is very red: The Juice is of

a most delicious Flavour when the Fruit is full ripe. This ripens the Beginning of September.

22. The *Pary Royal* (or *Pesche Royale*) is a large round Fruit, of a dark red or black Colour next the Sun, which goes off to a paler Red next the Wall: The Flesh comes from the Stone, where it is very red; the Juice is exquisitely rich, and equal to, if not exceeding, all other *Peaches* yet known, provided it grows upon a Soil rather dry than moist, and is expos'd to a good Aspect. This ripens the Beginning of September.

23. The *Admirable* is a large round Fruit, of a fine red Colour next the Sun, which goes off to a greenish Yellow next the Wall; the Flesh is firm, and full of rich sugar'd Juice; it parts from the Stone, where it is of a deep red Colour. This is a great Bearer, and ripens toward the End of August or the Beginning of September.

24. *La Pavie rouge de Pompone, ou Monstreux* (or the *Monstrous Pavy of Pompone*) is the largest *Peach* yet known; it is of a globular Shape, deeply divided into two Parts; of a beautiful Red next the Sun, which goes off to a bright Yellow next the Wall; the Flesh is melting, and of a rich vinous Flavour. It ripens the Middle of September. This should have a South-East Aspect, and the Shoots should be laid very thin against the Walls, for if there are many Fruit upon a Tree, they seldom ripen, or are well-flavour'd.

25. The *Catherine Peach* is a fine large Fruit (especially when not left too thick upon the Trees;) the Skin is cover'd with a soft Down, and is of a dull red Colour next the Sun, which goes off to a whi-

tish Green next the Wall; the Flesh is full of a rich vinous Juice, and, in a good Season, comes the nearest to the old *Newington Peach* of any other Sort. This is a great Bearer, but should be planted in a warm Soil, and to a South East Aspect. It ripens in the Middle of September.

26. The *Rumbullion* is a middle-siz'd Fruit, rather round than long, deeply divided by a Sulcus or Furrow in the Middle, of a pleasant red Colour next the Sun, but of a light yellow next the Wall: The Flesh is of a bright Yellow, and parts from the Stone, where it is of a deep red Colour. The Juice is of a rich vinous Flavour; 'tis a good Bearer, and ripens the Middle of September.

27. The *Malacotton* (or *Cotton Apple*) is a large fair *Peach*; the Skin is cover'd over with a thick downy Substance, from whence it took its Name; it is of a beautiful red Colour next the Sun, but of a light Yellow next the Wall; the Flesh is firm, and full of a rich vinous Juice, and when duly ripen'd, is an excellent Fruit. This ripens towards the latter End of September. It should have a warm Soil, and the Branches must be laid very thin against the Wall, otherwise the Fruit seldom comes to any thing.

28. *La Sanguinelle* (or the *Bloody Peach*, is a middle-siz'd Fruit, whose Flesh is of a deep red Colour within, from whence it had its Name; it parts from the Stone; the Outside next the Sun is of a deep Red, but the Side next the Wall is of a greenish yellow Colour. This ripens in October, so that unless the Autumn proves very favourable, it is not good for any thing.

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There are several other Sorts of *Peaches* which are very good in the South of *France* and other warm Countries, which with us do rarely ripen so as to be eatable, for which reason they are not worth cultivating; such are, the *Violette Tardive*, or *Late Violet*; *La Corbeil*, *La Pêche Noix*; the *Double-flower'd*, &c. which seldom ripen in *France* until the latter End of *October*, when the Nights with us are long, and frosty, the Season often very wet, and cold; so that these Fruits will be watery, insipid, and very unwholsome in this Country.

The *French* distinguish those we call *Peaches* into two Sorts, *viz.* *Pavies*, and *Peaches*; those are called *Peaches* which quit the Stone; and those whose Flesh closely adheres to the Stone, are call'd *Pavies*: These are much more esteem'd in *France* than the *Peaches*; though, in *England*, the latter are preferr'd to the former by many Persons.

The *French* do also distinguish them into *Male* and *Female*; the *Pavies* they make to be the *Male*, and the *Peaches* the *Female*: But this Division is without Foundation, since the Kernels of both Sorts will produce Trees equally; for the Flowers of *Peach-trees* are generally hermaphrodite, and have all the Parts of Generation in them, so that there is no Necessity of supposing any of them to be intirely *Male* or *Female*: But it is likely that this Distinction is of long standing, before Persons had a perfect Notion of *Male* and *Female* in Plants, or at least they did not know how to distinguish them asunder.

The *Nectarines* (as I have in another Place said) are by the *French* call'd *Brugnons*, which differ from the other two Sorts, in having a

firm, hard Flesh, and the Skins quite smooth, without any Down upon them. The Sorts of these I have already mention'd under the Article *Nectarines*, to which the Reader may readily turn, therefore I shall not repeat them in this Place.

I shall now set down the good Qualities of *Peaches*, by which any Person may judge of their Worth.

A good *Peach* ought to have a firm Flesh; the Skin should be thin, of a deep or bright red Colour next the Sun, and of a yellowish Cast next the Wall; the Flesh should be of a yellowish Colour, full of Juice, which should be high-flavour'd; the Stone small, and the Pulp or Flesh very thick. When a *Peach* hath all these Qualities, it may be esteem'd a valuable Fruit.

All the different Sorts of *Peaches* have been originally obtain'd from the Stones; which being planted, do produce new Varieties, as do the Seeds of all other Fruits: So that where Persons have Garden enough to allow Room for propagating these Fruits from Seeds, there is no Doubt but many good Sorts may be obtained, which will be better adapted to our Climate than such as are brought from warmer Countries; though it is true, that there will be many of them good for nothing, as is the Case of most Fruits and Flowers which are produc'd from Seeds, amongst which there may be some valuable Kinds, superior to those from whence the Seeds were taken, yet there is always a great Number which are little worth: but if we can obtain but two or three valuable Sorts, it is sufficient to make Amends for the Trouble of raising them: But where Persons are so curious as to plant the Stones

of these Fruits, great Regard should be had to the Sorts; and if the Fruit were permitted to remain upon the Trees until they dropp'd off, the Kernels would be fitter for planting, and more likely to grow. The best Sorts for sowing are those whose Flesh is firm, and cleaves to the Stone; and from amongst these you should chuse such as ripen pretty early, and have a rich vinous Juice; from which Sorts some good Fruit may be expected.

These Stones should be planted in Autumn, on a Bed of light dry Earth, about three Inches deep, and four Inches asunder; and in the Winter the Bed should be cover'd to protect them from the Frost, which if permitted to enter deep into the Ground will destroy 'em: In the Spring, when the Plants come up, they should be carefully clear'd from the Weeds, which should also be observ'd throughout the Summer; and if the Spring should prove very dry, if you refresh them now and then with a little Water; it will greatly promote their Growth: In this Bed they should remain until the following Spring; when they should be carefully taken up, so as not to break their tender Roots, and transplanted into a Nursery, in Rows three Feet asunder, and eighteen Inches distant Plant from Plant in the Rows, observing to lay a little Mulch upon the Surface of the Ground about their Roots, to prevent its drying too fast: And if the Spring should prove very dry, you should give them a little Water once a Week, until they have taken Root; after which, they should be constantly kept clear from Weeds, and the Ground between the Rows carefully dug every Spring, to loo-

sen it, so as that the tender Fibres may strike out on every Side.

In this Nursery they may remain two or three Years; after which, they should be transplanted, where they are to remain to produce Fruit.

In removing these Trees, you should observe to prune their downright Roots (if they have any) pretty short, and to cut off all bruised Parts of the Roots, as also all the small Fibres, which do generally dry, and when left upon the Roots, after planting again, grow mouldy, and decay; so that they are injurious to the new Fibres which are shot out from the Roots, and very often prevent the Growth of the Trees: But you should by no means prune their Heads; for the Plants which are produced from Stones, are generally of a more spongy Texture, and so more liable to decay when cut, than those which are budded upon other Stocks. Besides, as these Trees are design'd for Standards (for it is not proper to plant them against Walls until you see the Produce of their Fruit, to shew which of them deserves to be cultivated;) so they will never require any other pruning, but only to cut out decay'd Branches, or such as shoot out very irregular from the Sides; for more than this, is generally very injurious to them.

In planting these Trees, it will be the better way to dispose them singly in the Quarters of the Kitchen-Garden, where they will thrive and produce Fruit much better, than if they are planted pretty near each other in Rows; and as they are thus singly dispos'd, they will not do much Injury to the Crops which grow under them,

When

When they have produced Fruit, you will soon be a Judge of their Goodness: therefore such of them as you dislike may be destroy'd; but those which are good may be propagated by inoculating them upon other Stocks, which is the common Method now practis'd to propagate these Fruits: Therefore I shall now proceed to treat of that more particularly; in the doing of which, I shall set down the Method now commonly practis'd by the Nursery Gardeners; and then propose some few Things of my own, as an Improvement thereon, for such Persons who are very curious to have good Fruit. But first,

You should be provided with Stocks of the *Muscle* and *White Pear-Plumbs*, which are generally esteem'd the two best Sorts of *Plumbs* for Stocks to infoculate *Peaches* and *Nectarines* upon; as also some *Almond* and *Apricock* Stocks, for some tender Sorts of *Peaches* which will not grow upon *Plumb* Stocks: These should be all produced from the Stone (as hath been already directed in the Article of a *Nursery*) and not from Suckers, for the Reasons there laid down.

When these Stocks have grown in the Nursery two Years, they will be strong enough to bud, the Season for which is commonly about *Midsummer*, when you should make choice of some good Cuttings of the Sorts of Fruit you intend to propagate, always observing to take them from healthy Trees, and such as do generally produce a good Quantity of well-tasted Fruit; for it is very certain, that any Sort of Fruit may be so far degenerated, where this Care is wanting, as not to be like the same Kind. Besides, whenever a Tree is unhealthy, the

Buds taken from that Tree will always retain the Distemper, in a greater or less Degree, according as it hath imbib'd a greater or less Quantity of the distemper'd Juice. Thus, for Instance, where a *Peach* or *Nectarine* Tree hath been greatly blighted, so as that the Shoots have grown busled, and the Leaves curled up to a great Degree, that Distemper is seldom recover'd again by the greatest Art, or at least not under several Years Management; for let the Seasons prove ever-so favourable, yet these Trees will continually shew the same Distemper: Which many Persons are so weak as to suppose a fresh Blight; whereas in reality it is no other but the Remains of the former Sickness, which are spread and intermix'd with all the Juices of the Tree; so that whatever Buds are taken from such Trees, will always retain a Part of the Distemper.

The Cuttings with which you are thus to be provided, should always be taken from the Trees either in a Morning or Evening, or else in a cloudy Day; for if they are cut off when the Sun is very hot, the Shoots will perspire so freely, as to leave the Buds destitute of Moisture, which is often the Cause of their miscarrying; and the sooner these are used, when cut from the Trees, the better they will take. The Manner of this Operation being fully explain'd under the Article of *Inoculation*, I shall not repeat it in this place. The Management of these Trees during their remaining Time in the *Nursery*, is likewise fully set down under that Article: I shall therefore proceed to the Planting of these Trees, either against Walls, *Espaliers*, or for Standards. But as the

the future Success of these Trees doth in a great measure depend upon the Soil in which they are planted; so I shall briefly set down the Method of Preparing the Earth for the Borders where they are design'd to grow.

The best Earth for *Peach* Trees, is such as is taken from a Pasture Ground, that is neither too stiff and moist, nor over-dry, but of a middling Nature: This should be dug from the Surface of the Ground about ten Inches deep, taking the Turf with it; and should be laid in Heaps eight or ten Months before it be used, during which Time it should be often turn'd, to rot the Turf, and break the Clods, whereby it will be render'd very light, and easy to work; and about the Beginning of *September* you should carry it into the Garden, and make the Borders, which must be rais'd in Height proportionable to the Moisture of the Garden; for if the Ground be very wet, it will be advisable to lay some Rubbish in the Bottom of the Border, to drain off the Moisture, and to prevent the Roots of the Trees from running downwards; then raise the Border of Earth at least a Foot above the Level of the Ground, so that the Roots of the Trees may always remain dry: but if the Ground be pretty dry, the Borders should not be rais'd above four or five Inches higher than the Surface, which will be sufficient to allow for their sinking.

As to the Breadth of these Borders, that can't be too great; but they should never be less than six Feet broad where Fruit-Trees are planted; for when the Borders are made very narrow, the Roots of the Trees will be so confin'd in four or five Years Time, that they

will seldom thrive well after. The Depth of these Borders should not be greater than two Feet; for where they are prepared to a great Depth, it only intices the Roots of the Trees downward, which may be the Cause of their future Barrenness; for their Roots being got down below the Influences of the Sun and Showers, do imbibe a great Quantity of crude Juices; which only add to the luxuriant Growth of the Trees, and destroy their Fruitfulness: besides, whatever Fruit are produced from such Trees, are not near so well-tasted, as are those which grow upon those Trees whose Roots lie near the Surface, and enjoy the kindly Benefit of the Sun's Heat, to correct and digest whatever Crudities there may be in the Earth.

Your Borders being thus prepar'd should lie about three Weeks or a Month to settle, by which time the Season for Planting will be come, which should be perform'd as soon as the Leaves begin to decay, that the Trees may take Root before the Frost comes on to prevent them: Then you should carefully take up the Trees out of the Nursery, so as not to break or bruise their Roots; and with a sharp Knife you must prune the extreme Parts of them, and cut off smooth any broken or bruised Roots; as also all the small Fibres should be taken off, for the Reasons before given.

And having thus prepar'd your Trees, you should measure out their Distance, which ought never to be less than fourteen Feet; but where the Ground is very good, they should be planted sixteen Feet asunder. This I doubt not, will be thought too great a Distance by many Persons, especially since it is
contrary

contrary to the general Practice at this Time: but I am satisfied, whoever shall try the Experiment, will find it no more than is sufficient for these Trees, where they are rightly managed; for if they do take kindly to the Soil, their Branches may be so train'd, as to furnish all the lower-part of the Wall in a few Years; which is what should be principally regarded, and not, as is too often the Practice, run up the Shoots in Height, and leave all the lower Part of the Tree destitute of bearing Wood; so that, in a few Years, there will not be any Fruit but upon the upper Part of the Trees: which also must be the Case where they are planted too close; because there being no Room to extend the Branches on either Side, they are obliged to lead them upright, which produces the before-mention'd ill Effect.

And here I can't help taking notice of another very great Error in planting Wall-Fruit; which is, the placing Standard, or Half-Standard Trees, between the others, to cover the upper Part of the Wall, and to produce Fruit, until the Trees underneath are grown up sufficient to furnish the Walls, when the Standards are to be taken away: This is done, without considering that the greater Number of Trees are planted in a small Compass, the less Nourishment they can receive, and so, consequently, must be the weaker; for the same Space of Ground can't nourish twenty Trees equally as well as it could ten: So that whatever Strength the Standard Trees may have, the Dwarfs will be proportionably weaker: And it is a common Observation, that most Trees extend their Roots as far under-ground, as their Branches spread above-ground;

so that there should always be the same Allowance given to the Wall-Trees, if we would have them strong and vigorous; therefore the building very high Walls for Fruit is to no Purpose, for a ten or twelve Foot Wall will be sufficient for most Sorts of Fruit.

But to return to Planting: After you have mark'd out the Places where each Tree is to stand, you must with your Spade make a Hole wide enough to receive the Roots of the Tree; then you should place it down, observing to turn the Bud outwards, that the wounded Part of the Stock may be h.d, and let the Stem of the Tree be placed about four or five Inches from the Wall, with its Head inclining thereto; then fill in the Earth with your Hands, observing to break the Clods, that the Earth may fall in between the Roots, so as no void Spaces may be left about them. You should also gently shake the Tree with your Hands, to settle the Earth down the better; then with your Foot gently press down the Earth about the Stem; but do not tread it down too hard, which is many times a very great Fault; for when the Ground is inclinable to bind, the treading of it close doth often render the Ground so hard, as that the tender Fibres of the Roots can't strike into it, whereby the Tree remains at a Stand for some Time; and if the Earth be not loosen'd in Time, it frequently dies; so that whenever you observe the Earth of your Borders to be bound, either by great Rains, or from any other Cause, you should dig and loosen it again, observing always to do it in dry Weather, if in Winter or Spring; but in Summer it should be done in a moist Season.

After

After you have thus planted your Trees, you should fasten their Heads to the Wall, to prevent their being shaken by the Wind, which would disturb their Roots, and break off the tender Fibres soon after they were produced, to the no small Prejudice of the Trees: You should also lay some Mulch upon the Surface of the Ground about their Roots, to prevent the Frost from penetrating the Ground, which would injure, if not destroy the small Fibres.

These Things being duly observed, they will require no farther Care 'till the *February* following; towards the latter end of which Month, or the beginning of *March*, according as the Season is earlier or later, you must cut off the Heads of the new-planted Trees, leaving only four or five Eyes above the Bud; in doing of which, you must be very careful not to disturb their Roots; to prevent which, you should place your Foot down close to the Stem of the Tree, and take fast hold of that Part of the Stock below the Bud with one Hand, to hold it steady, while with the other Hand you gently slope off the Head of the Tree with a sharp Knife at the intended Place, which should always be just above an Eye: This should always be done in dry Weather; for if there shou'd be much Rain soon after it is done, the Wet will enter the wounded Part, and damage the Tree: Nor should it be done in frosty Weather, for the same Reason; for that would enter the wounded Part, and prevent its healing over. After you have headed the Trees, you should gently loosen the Earth of the Borders, to admit the Fibres of the Roots: but you must be very care-

ful, in doing of this, not to cut or bruise their new Roots, which would also damage them: And if the Mulch which was laid about their Roots in Autumn, be rotted, you may dig it into the Border at some Distance from the Roots of the Trees; and when the dry Weather comes on, you should pare off some Turf from a Pasture Ground, which should be laid upon the Surface of the Border about the Roots of the Trees, turning the Grass downwards, which will preserve a gentle Moisture in the Earth better than any other Sort of Mulch; and this will not harbour Insects, as do most Sorts of Dung and Litter, to the no small Detriment of the Trees.

In watering of these Trees, you should observe to do it with a Nossel upon the Watering-Pot, so as to let it out in Drops; for when it is hastily poured down, it causes the Ground to bind; and if you water over the Head of the Tree, it will be of great Service to it: Your Waterings should not be repeated too often, nor should it be given them in great Quantity, both which are very injurious to new-planted Trees.

In the Middle of *May*, when these Trees will have several Shoots six or eight Inches in Length, you should nail them to the Wall, observing to train them horizontally, rubbing off all fore-right Shoots, or such as are weak, whereby those which are preserv'd will be much stronger: But if there are not more than two Shoots produced, and those very strong, you should at the same time nip off their Tops, which will cause each of 'em to push out two or more Shoots, whereby the Wall will be better supply'd with Branches: You must

must also continue to refresh them with Water in dry Weather, during the whole Season, otherwise they will be apt to suffer; for their Roots having but little hold of the Ground the first Year after transplanting, if the Season should prove very dry, 'twill greatly retard their Growth, if due Care be not taken to water them.

In the Beginning of *October*, when you observe the Trees have done shooting, you should prune them; in doing of which you must shorten the Branches in proportion to the Strength of the Tree, which, if strong, may be left eight Inches long; but if weak, should be shorten'd to four or five: Then you should train them horizontally to the Wall (as was before directed;) so that the Middle of the Trees may be void of Branches; for that Part of the Tree will be easily furnish'd with Wood afterwards: whereas, if the Shoots are train'd perpendicularly to the Wall, those which are the strongest will draw the greatest Share of the Sap, from the Roots, and mount upwards; so that the Side-Branches will be deprived of their Nourishment, and grow weaker, until they many times decay; and this is the Reason that we see so many *Peach-Trees* with one upright Stem in the Middle, and the two Sides wholly unfurnish'd with Branches, whereby the Middle of each Tree cannot produce any Fruit, that being fill'd with large Wood, which never produces any Bearing Shoots: Nor can the two Sides of the Trees be regularly fill'd with fruitful Branches, when this Defect happens to them; therefore this Method should be carefully observ'd in the training up young Trees; for when they are permitted to run in-

to Disorder at first, it will be impossible to reduce them into a regular healthful State afterwards, the Wood of these Trees being too soft and pithy to admit of being cut down again (as may be practis'd on many other hardy Fruit-Trees, which will shoot out vigorously again;) whereas these will gum at the Places where they are wounded, and in a few Years intirely decay.

The Summer following, when the Trees begin to shoot, you should carefully look over them, to rub off all fore-right Buds, or such as are ill-plac'd, and train those which are design'd to remain horizontally to the Wall, in their due Order as they are produced; for this is the principal Season when you can best order the Trees as you would have them; whereas if they are neglected until *Midsummer*, as is the common Practice, a great Part of the Nourishment will be exhausted by fore-right Shoots, and other useless Branches, which must afterwards be cut off; and hereby the remaining Shoots will be render'd very weak, and perhaps some part of the Wall be intirely unfurnish'd with Branches; which might have been easily supply'd in the Beginning of *May*, by stopping some of the stronger Shoots, in such Parts of the Tree where there is a Necessity for more Branches, which would cause each of them to shoot out two or more Side-branches below the Ends of the Shoots, which may be guided into the vacant Parts of the Tree, as they are produced, so as that every Part may be regularly furnish'd with proper Wood, which is the greatest Beauty and Excellency of Wall-Trees: But you should always forbear stopping the Shoots in Summer, where

where there is not a Necessity for Branches to fill the Wall; for there cannot be a greater Fault committed, than that of multiplying the Number of Shoots, so as to cause a Confusion, whereby the Branches will be too weak to produce good Fruit: Besides, when they are too closely laid in upon the Wall, the Air is excluded from the Shoots by the great Number of Leaves, so that they are never duly ripen'd, and, consequently, what Fruit is produced thereon can't be so well-tasted as those which are produced upon such Trees where the Shoots receive all the Advantages of Sun and Air to mature them.

Thus having set down the Method of Training up young Trees, I shall now proceed to their Pruning, and future Management; which being the same as with full-grown Trees, will serve for general Directions how to manage these Sorts of Fruit.

In the Pruning of *Peach* and *Narine* Trees (which require the same Culture) the two following Rules should be strictly observ'd; viz. 1st, That every Part of the Tree be equally furnish'd with Bearing-Wood; and, 2dly, That the Branches are not laid in too close to each other, for the Reasons before laid down, with some others, which will be hereafter inserted. As to the first, it must be observ'd, that all these Trees do produce their Fruit upon the young Wood, either of the preceding Year, or at most the two Years Shoots, after which Age they do not bear: Therefore the Branches should be pruned so as to cause them to produce new Shoots annually in every Part of the Tree; which cannot be done in the ordinary Method of Pruning, where

Persons neglect their Trees at the Season when they are most capable of Management, which is in *May*, at which Time the luxuriant Growth of Branches may be check'd by pinching, and new Shoots produced where they are wanting, by stopping the neighbouring Branches; which Shoots being produced at that Season, will have Time enough to ripen and gain Strength before the Autumn comes on; whereas all those Shoots which are produced after the Beginning of *June*, will be crude and pithy; and tho' they may sometimes produce a few Blossoms, yet those do rarely bring Fruit; nor are the future Branches good which are produced from such Wood, the Vessels being too large to strain the Juices, so that they easily admit great Quantities of crude Nourishment to pass through them. Therefore those Persons who only regard their Wall Trees at two different Seasons, viz. the Winter and Midsummer Pruning, can't possibly have them in good Order; for when all the Branches which were produced in the Spring are permitted to remain until the Middle or Latter end of *June* (as is the common Practice) some of the most vigorous will draw the greatest Part of the Nourishment from the weaker Branches, which, when the strong ones are taken off, will be too weak to produce fair Fruit; and hereby the Strength of the Trees is exhausted to nourish the useless Branches, which are annually cut off again: And thus are too many Trees managed, and at the same time Complaints made of their Luxuriancy; because two or three Shoots, by drawing in the greatest Share of the Nourishment, grow very strong and woody: (whereas, if

if the Nourishment had been equally distributed to a regular Quantity of Branches, there would be no Sign of their too great Strength) until, by often cutting off these vigorous Branches, the Trees are either intirely destroy'd, or at least render'd so weak as not to be able to produce Fruit: For altho' by thus weakening the Branches, it is often the Means to produce a good Number of Blossoms (as may many times be observed also upon autumnal Shoots) yet the utmost of their Strength is spent in expanding the Flowers, so that they rarely produce Fruit, and very often the greatest Part of the Branches die soon after, which is suppos'd to be occasion'd by a Blight (as I have elsewhere said) when in reality it is nothing less than the Fault of those who have the Management of the Trees. It is therefore of the greatest Consequence to Wall-Trees, especially of these Sorts, to go over them two or three times in the Month of *May*, to rub off all irregular Shoots, and to train in the Branches that are left in due Order to the Wall, that each Shoot may have an equal Advantage of Sun and Air, both of which are absolutely necessary to ripen and prepare the Wood for the next Year's Bearing.

And by duly observing the Trees at this Season, there will not be Occasion for so much Cutting, as is often practis'd on *Peach-Trees*, to their great Injury; for their Wood Branches are generally soft, tender, and pithy, which, when greatly wounded, are not healed over again so soon as many other Sorts of Trees; and the Wet insinuating into the wounded Parts, doth often cause the Branches to canker and die; which may be entirely avoid-

ed, by the gentle, easy Method of Pinching and Rubbing off the Buds in the Spring-season, which never makes any Wounds on the Tree; and hereby a vast deal of Labour is saved; for one Person who is ready at this Business will go over a great Quantity of Walling in a Day; whereas if the Trees are permitted to grow rude all the Spring, they will require six times the Labour to reduce 'em into Order. Besides, it is a great Disadvantage to the Fruit, in permitting the Branches of the Trees to extend from the Wall, and shade 'em; and when they have grown under the Shelter of these Branches and Leaves all the Spring; until Midsummer, then by pruning off some of these Shoots, and nailing the others close to the Wall, the Fruits are suddenly expos'd to the Sun and Air, whereby they receive a very great Check, and are not only retarded in their Growth, but often render'd ill-tasted, and have tough Skins.

The Distance which the Branches of these Trees should be allow'd against the Wall must be proportion'd to the Size of the Fruit, or the Length of the Leaves: For if we observe how the Branches of Trees are naturally dispos'd to grow, we shall always find them plac'd at a greater or less Distance, as their Leaves are larger or smaller (as I have already observ'd under the Article of *Leaves*;) And there is no surer Guide to a curious Artist, than Nature, from whence a Gardener should always be directed in every Part of his Profession; since his Business is to aid and assist Nature, where she is not capable of bringing her Productions to Maturity, or where there is Room to make considerable Improvements by

Art;

Art; which cannot be any other-wise effected, than by gently assisting her in her own Way.

But to return to Pruning of these Trees: The Branches being carefully train'd in, as before directed in the Spring and Summer Seasons; we come now to treat of the Winter Pruning, which is commonly perform'd in *February* or *March*: but the best Season for this Work is about *Michaelmas*, when their Leaves begin to fall, which will be early enough for their Wounds to heal before the Frost comes on, so that there will be no Danger of their being hurt thereby: And the Branches of the Trees being proportion'd to the Strength of the Roots at that Season, all the ascending Sap in the Spring will be employ'd to nourish only those useful Parts of the Branches which are left: whereas if they are left unprun'd 'till *February*, the Sap in the Branches being then in Motion, as may be observ'd by the swelling of the Buds, the greatest Part of it will be drawn up to the extreme Parts of the Branches, to nourish such Blossoms as must be afterwards cut off: And this may be easily known, by observing the strongest Shoots at that Season, when you will find the extreme Buds to swell faster than most of the lower ones; for there being no Leaves then upon the Branches to detain the Sap to nourish the lower Buds, the upper ones will always draw from those below.

But it is a constant Practice amongst Gardeners, founded upon long Experience, to prune weak Trees early in the Winter, and luxuriant Trees late in the Spring, in order to check their Luxuriancy. Now it is evident, that this Check does not proceed from any conside-

rable Loss of Sap at the Wounds of the pruned Tree (excepting a few of the bleeding Trees, when cut at that Season) but must arise from some other Cause; for by several Experiments made by the Reverend Mr. *Hales*, in fixing mercurial Gages to the Stems of fresh cut Trees, he found those Wounds were constantly in an imbibing State, except the Vine in the bleeding Season.

When a weak Tree is pruned early in the Beginning of Winter, the Orifices of the Sap-vessels are clos'd up long before the Spring; and consequently, when in the Spring and Summer, the warm Weather advancing, the attracting Force of the perspiring Leaves is not then weakned by many Inlets from fresh Wounds, but is wholly exerted in drawing Sap from the Root: whereas, on the other hand, when a luxuriant Tree is pruned late in the Spring, the Force of its Leaves to attract Sap from the Root will be much spent and lost at the several fresh cut Inlets.

Besides, if it were no Advantage to the Trees to prune them at this Season (which, I think no one will have Reason to doubt, after making the Trial) but that it only succeeds as well as the Spring Pruning; yet there is a great Advantage in doing of it at *Michaelmas*; for that being a much more leisure Season with Gardeners than the Spring, they will have more Time to perform it carefully; and then they will not have too many Things come together, which may require to be immediately executed: for the Spring being the principal Season for Cropping their Kitchen-Garden, and attending their Hot-beds, if they are disengaged from the Business of Pruning at that Time,

Time, it will be of great Advantage, especially where there is a great Quantity of Walling. And here is also another Benefit in Pruning at this Season, which is, the having the Borders at liberty to dig and make clean before the Spring, so that the Garden may not appear in Litter at that Season.

Having said thus much concerning the Time of Pruning, I shall now proceed to give some general Directions how it is to be perform'd on *Peach* and *Nectarine* Trees, which require a very different Management from most other Sorts of Fruits.

In Pruning of these Trees, you should always observe to cut them behind a Wood-bud (which may be easily distinguish'd from the Blossom-buds, that are shorter, rounder, and more turgid than the Wood-buds;) for if the Shoot have not a leading Bud where it is cut, it is very apt to die down to the next leading Bud; so that what Fruit may be produced above that, will come to nothing, there being always a Necessity of a leading Bud to attract the Nourishment; for it is not sufficient that they have a Leaf-bud, as some have imagined, since that will attract but a small Quantity of Nourishment; the great Use of the Leaves being to perspire away such crude Juices as are unfit to enter the Fruit: The Length you should leave these Branches, should be proportion'd to the Strength of the Tree, which, in a healthy strong Tree, may be left ten Inches or more; but in a weak one, they should not be more than six Inches: however, in this you must be guided by the Position of a leading Bud; for it is better to leave a Shoot three or four Inches longer, or to cut it two or

three Inches shorter than we would chuse to do, provided there be one of these Buds, it being absolutely necessary, for the future Welfare of the Tree: You should also cut out entirely all weak Shoots, tho' they may have many Blossom-buds upon them; for these have not Strength enough to nourish the Fruit, so as to give it a kindly Flavour, but they will weaken the other Parts of the Tree.

In nailing the Shoots to the Wall, you must be careful to place them at as equal Distances as possible, that their Leaves, when come out, may have Room to grow, without shading the Branches too much; and you should never nail them upright, if it can be prevented; for when they are thus train'd, they are very subject to shoot from the upper-most Eyes, and the lower part of the Shoots will thereby become naked.

There is not any Thing in the Business of Gardening, which has more exercis'd the Thoughts of the Curious, than how to preserve their tender Sorts of Fruit from being blighted in the Spring of the Year; and yet there has been little wrote upon this Subject which is worth Notice: Some have propos'd Mattresses of Straw or Reeds to be placed before the Fruit-Trees against Walls, to prevent their being blasted: Others have directed the fixing horizontal Shelters in their Walls, to prevent the perpendicular Dew or Rain from falling upon the Blossoms of the Fruit-Trees, which they suppos'd to be the chief Cause of their Blighting: But both these Contrivances have been far from answering the Expectations of those Persons who have put them in Practice (as I have elsewhere shewn;) therefore

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therefore it may not be improper to repeat some Things in this Place, which I have before mention'd, in relation to this Matter. And,

1st, I have already said, That the Blights, which are so often complain'd of, do not proceed from any external Cause or Inclemency in the Season, so often, as from a Distemper or Weakness in the Trees: For if we observe the Trees at that Season, where they are the most subject to what is call'd a Blight, we shall find the Branches very small, weak, and not half ripen'd, as also train'd in very close to each other; these Branches are, for the most part, full of Blossom-buds (which is chiefly occasion'd by their want of Strength.) These Buds do indeed open, and, to Persons not skill'd in Fruit-Trees, shew a great Prospect of a plentiful Crop of Fruit; whereas the whole Strength of the Branches is spent in nourishing the Flowers, and being unable to do any more, the Blossoms fall off, and the small Efforts of the Leaf-buds are check'd, so that, many times, the greatest Part of the Branches die away; and this is call'd a great Blight: whereas at the same time it may be often observ'd, that some Trees of a different Sort, nay, even some of the same Sort which were stronger, tho' placed in the same Soil, expos'd to the same Aspect, and subject to the same Inclemency of Air, have escap'd very well, when the weak Trees have appear'd to be almost dead; which is a plain Indication that it proceeds from some Cause within the Tree, and not from any external Blight. All this will therefore be remedy'd, by observing the foregoing Directions in the Pruning and Management of the Trees, so as never to

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over-burden them with Branches, nor to suffer any Part of the Trees to exhaust the whole Nourishment from the Root, so as to cause the other Parts to be very weak; but to distribute the Nourishment equally to every Shoot, so that there may be none too vigorous, at the same time that others are too weak; and by continually rubbing off useless or fore-right Shoots, as they are produced, the Strength of the Trees will not be spent to nourish such Branches as must be afterwards cut out, which is too often seen in the Management of these Trees. And,

2^{dly}, It sometimes happens, that the Roots of these Trees are buried too deep in the Ground, which, in a cold or moist Soil, is one of the greatest Disadvantages that can attend these tender Fruits; for the Sap which is contain'd in the Branches, being by the Warmth of the Sun, put strongly into Motion early in the Spring, is exhausted in nourishing the Blossoms, and a Part of it is perspired through the Wood-branches, so that its Strength is lost before the Warmth can reach to their Roots, to put them into an equal Motion in search of fresh Nourishment, to supply the Expence of the Branches, for want of which, the Blossoms fall off and decay, and the Shoots seem to be at a Stand, until the farther Advance of the Warmth penetrates to the Roots, and sets them in Motion; when suddenly after, the Trees, which before look'd weak and decaying, do make prodigious Progress in their Shoots; and before the Summer is spent, are furnish'd with much stronger Branches, than those Trees which have the full Advantage of Sun and Showers, and that are more fruitful

ful and healthy; which must certainly be owing to the former Observation; as also to their drawing in a great Quantity of crude Moisture, which, though productive of Wood, is yet unkindly for Fruit. If, therefore, this be the Case, there is no Way of helping this, but by raising up the Trees, if they are young; or, if they are too old to remove, it is the better Way to root them out, and make new Borders of fresh Earth, and plant down young Trees; for it is a great Vexation to be at the Trouble and Expence of pruning and managing these Trees, without having the Pleasure of reaping any Advantage from them. Which will always be the Case, where the Trees are thus injudiciously planted. Or,

3^{dly}, This may proceed from the Trees wanting Nourishment, which is many times the Case, where they are planted in a hard, gravelly Soil, in which it is the common Practice to dig Borders three or four Feet wide, and three Feet deep into the Rock or Gravel; which is fill'd with good fresh Earth, into which the Trees are planted, where they will thrive pretty well for two Years, until their Roots reach the Gravel, where they are confin'd, as if planted in a Pot, and for want of proper Nourishment, the Branches do continually decay every Year. This cannot be help'd, where the Trees have been growing some Years, without taking them entirely up, or by digging away the Gravel from their Roots, and adding a large Quantity of fresh Earth, that may afford them a Supply of Nourishment. But where a Person intends to plant Fruit-Trees upon such a Soil, I would advise him

never to dig into the Gravel, but, on the contrary, to raise the Borders, at least two Feet above it, with good fresh Earth, which, if made of a considerable Width, so that their Roots may have Room to extend themselves upon the Gravel, they will enjoy the kindly Influences of the Sun and Showers, and produce delicate, well-flavour'd Fruit in plenty.

But if the Unfruitfulness of the Trees do not proceed from any of the before-mention'd Causes, and is the Effect of unkindly Seasons: then the best Method yet known, is, in frosty dry Weather, when little Dew falls, to sprinkle the Branches of the Trees gently with Water in the Blossoming-season; and while the young-set Fruit is tender (which should always be done before Noon, that the Moisture may evaporate before the Night comes on;) and if in the Night you carefully cover the Trees with Mats, Canvas, or some such light Covering, it will be of great Service to them: However, where the Trees are strong and vigorous, they are not so liable to suffer by a small Inclemency, as are those which are weak; so that there will be few Seasons in which there may not be Hopes of a moderate Quantity from them, tho' there should be no Covering used.

When your Fruit is set, and grown to the Bigness of a Small-Nut, you should go over the Trees, and thin them, leaving 'em at least five or six Inches asunder; for when they are permitted to remain in Bunches, as they are often produced, the Nourishment which should be employ'd wholly to the Fruits design'd to stand, will be equally spent amongst the whole Number, a great Part of which must be af-

terwards pull'd off; so that the sooner this is done, the better it will be for the remaining Fruit: And if it should sometimes happen, that a Part of those left, by any Accident should be destroy'd, yet the remaining ones will be much the larger and better-tasted for it, and the Trees will gain more Strength; for a moderate Quantity of Fruit is always preferable to a great Crop; the Fruit, when but few, will be much larger, better-tasted, and the Trees in a Condition to bear well the succeeding Years: whereas when they are over-charg'd with Fruit, it is always small, ill-tasted, and the Trees are generally so much weaken'd thereby, as not to be in a Condition for bearing well for three or four Years after. So that, upon the Whole, it is much better to have a lesser Number of Fruit, than is commonly esteem'd a Crop, than to have too many, since the Fruit, and also the Trees, are benefitted thereby.

The farther Management of *Peach-trees* in Summer I have already mention'd, and shall only add a Word or two more upon that Head in this Place:

1st, That the Shoots being regularly train'd to the Wall as they are produc'd, the Fruit will always be equally expos'd to the Sun and Air, by which it will be kept in a constant and equal State of Growing; whereas when they are over-shadow'd by luxuriant Branches for some Time, and afterwards expos'd to the Sun, by cutting off those Branches, their Skins will grow tough, and the Fruit be greatly retarded in its Growth.

2^{dly}, By rubbing off and displacing irregular Shoots as they are produced, there will be no need to

use a Knife to these Trees in Summer, which is what they are often greatly injured by; for when there are large Wounds made on these Trees, especially in Summer, it weakens them very much. Besides (as I before said) by doing this early, the Sap of the Trees is not employ'd to nourish useless Branches.

3^{dly}, I would advise, Never to shorten any of the Branches in Summer, unless it be to procure some Side-shoots to fill up a Vacancy of the Wall; and this should never be done after *May*, because the Shoots produced after that Time are never duly ripen'd, and so are no better than autumnal Branches.

When these Rules are duly executed, there will be no Occasion to pull off the Leaves of the Trees, to admit the Sun to the Fruit, which is too often practis'd; for if we consider, that the Leaves are absolutely necessary to cherish the Blossom-buds, which are always form'd at the Foot-stalks of the Leaves; so, pulling them off before they have perform'd the Office assign'd 'em by Nature, is doing great Injury to the Trees: therefore I caution every one against that Practice.

PERSICARIA; Arsmart.

The Characters are;

It is a Plant with an apetalous Flower, having several Stamina (or Chives) which arise from the multifid Calyx: The Pointal afterwards becomes an oval pointed, smooth Seed, inclos'd in the Capsule which was before the Flower-cup: To which may be added, It hath jointed Stalks. and the Flowers are produced in Spikes.

The Species are;

1. PERSICARIA; *mitis, maculosa.*
C. B. P. Dead, or Spotted Arsmart.

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2. PERSICARIA; *vulgaris, acris, seu Hydro-piper. J. B.* Water-pepper, Lake-weed, or Arsmart.

3. PERSICARIA; *major, lapathi folius, calice floris purpureo. Tourn.* Greater Arsmart, with Dock-leaves, and a purple Flower-cup.

4. PERSICARIA; *Orientalis, Nicotiana folio, calice florum purpureo. T. Cor.* Eastern Arsmart, with a Tobacco-leaf, and a purple Flower-cup.

There are several other *Species* of this Plant, which grow wild upon moist Soils and Dunghills in divers Parts of *England*: But as they are rarely cultivated in Gardens, and being Plants of no Use at present, so I omit enumerating of them in this Place.

The two first Sorts here mention'd are sometimes used in Medicine; the latter of which is a very sharpacid Plant, from whence it had its Name of *Water-pepper* and *Arsmart*: This is a perennial Plant, which grows in great Plenty on the Sides of Ditches, and in moist Places, almost in every Part of *England*, and is a very bad Weed, if once it gets Possession in a Garden; for the Roots extend themselves greatly under-ground, and arise from every Joint (as doth *Couch-grass*) so that it is with great Difficulty extirpated.

The first is an annual Plant, that propagates itself in great Plenty from Seeds, which falling upon the Ground, rise in the succeeding *Spring*, and spread over the Ground, where-ever they are permitted to grow; so that they should not be suffer'd to remain in Gardens: These are both gathered in the Fields in *Autumn* for Medicinal Use, when they are in Perfection.

The third Sort is cultivated in some curious Gardens for Variety,

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it making a handsome Appearance during the Season of its Flowering: This may be propagated by sowing the Seeds upon a Bed of rich moist Earth in *Autumn*, soon after they are ripe, and the Plants will come up the Spring following, when they may be transplanted into the Borders where they are to remain: This is also an annual Plant, which requires to be sown every Year, or the Seeds permitted to shed, which will grow better than those which are sown by Art.

The fourth Sort was brought from the Eastern Country by Monsr. *Tournefort*, to the *Royal Garden* at *Paris*, from whence it hath been since communicated to several Parts of *Europe*. This Plant (though but an Annual) doth grow to be ten or twelve Feet high, and divides into several Branches, each of which produces a beautiful Spike of purple Flowers at their Extremities in the *Autumn*; which together with its large green Leaves, and jointed Stalks, do make a very grand Figure in the Borders of large Gardens, late in the Season, when few other Plants are in Beauty.

The Seeds thereof should be sown in *Autumn* as soon as they are ripe; or if they are permitted to fall on the Ground, the Plants will come up the *Spring* following better than when they are sown by Art, (as was before observed); for if the Seeds are sown in the *Spring*, it is very rare that any of them succeed; and if some few Plants do come up from those Seeds sown at that Season, they seldom grow near so strong as those which are produced from the Seeds which fell in *Autumn*; so that there is no other Culture required to this Plant, but to transplant them out

in the *Spring* where they are design'd to stand, which should be in large Gardens, giving them great Space; for if they are placed near other Plants, they will shade them entirely from the Sun, and by continual dripping upon them, will greatly injure them; and if they stand too close, their Beauty is greatly diminished.

When the Plants begin to aspire upwards, (which is commonly in *July*) their Side-shoots should be pruned off, to make them advance in Height, and preserve them within Compass; otherwise they are very subject to branch out widely on every Side, so as to become troublesome in a Garden; but when they are pruned up regularly five or six Feet high, they may afterwards be permitted to shoot out Side-branches; since those which are produced above that Height, will never be very long or troublesome, but will add to the Beauty of the Plant: This delights in a rich moist Soil, upon which it will grow to a prodigious Height; it produces its Flowers in *September*, which continue in Beauty till the Frost destroys 'em.

PERVINCA; Periwinkle.

The Characters are;

The Flower-cup consists of one Leaf, which is divided into five long, narrow Segments: The Flower also consists of one Leaf, which expands in the Form of a Salver, and is cut into five broad Segments: The Pointal, which arises from the Centre of the Flower-cup, becomes a Fruit compos'd of two Husks (or Pods) which contain oblong, cylindrical, furrow'd Seeds: To which may be added, That this Plant shoots out many long creeping Branches, which strike out Roots at their Joints,

The Species are;

1. PERVINCA; *vulgaris, angustifolia, flore caruleo.* Tourn. Common or Narrow-leav'd Periwinkle, with a blue Flower.

2. PERVINCA; *vulgaris, angustifolia, flore albo.* Tourn. Common Periwinkle, with a white Flower,

3. PERVINCA; *vulgaris, latifolia, flore caruleo.* Tourn. Greater Periwinkle with a blue Flower.

4. PERVINCA; *vulgaris, angustifolia, flore rubente.* Tourn. Common Periwinkle with a reddish Flower.

5. PERVINCA; *vulgaris, angustifolia, flore pleno, saturatè purpureo.* Tourn. Common Periwinkle, with a double Flower, of a deep purple Colour.

6. PERVINCA; *angustifolia, vulgaris, variegata, ex aureo & viridi.* Boerb. Ind. Common Periwinkle, with yellow-strip'd Leaves.

7. PERVINCA; *angustifolia, vulgaris, variegata ex argenteo & viridi.* Boerb. Ind. Common Periwinkle, with silver-strip'd Leaves.

The first Sort grows wild in divers Parts of *England*, and is not so much cultivated in Gardens at present, as it was formerly, when it was planted for edging of Borders; but the Shoots being very apt to root at their Joints, render'd it very difficult to preserve in any tolerable Order; and the Plants rooting deep in the Ground, do greatly exhaust the Goodness of the Soil, so that it is now almost wholly cast out of Gardens.

The second and fourth Sorts are Varieties from the first, differing only in the Colour of their Flowers; as are also the sixth and seventh, which differ in their variegated Leaves, for which they are preserved in the Gardens of those who admire strip'd Plants.

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The fifth Sort produces fine double Flowers, which makes a very handsome Appearance during its Season of Flowering, which renders it worthy of a Place in every good Garden.

The third Sort grows much larger than the former, and produces large blue Flowers: This is found in Woods and shady Places in divers Parts of *England*.

All these Plants multiply exceedingly by their Shoots from the old Roots, which trailing upon the Ground, do strike out Roots in a short time and may be taken off and transplanted where they are to remain: And tho' they are not so proper for a Flower-garden, yet a few Roots of each Sort may be planted in shady Borders under Trees, where few other Plants will thrive, or in small Wilderesses; in which Places, if they are kept within Compass, they make a pretty Variety. The large Sort may be planted under Hedges, in Woods, &c. where it will grow four or five Feet high, and continue a long Time in Flower.

These Plants propagate themselves by Roots so plentifully, that they seldom produce Fruit.

Monf. *Tournefort* says, He could never observe any Fruit upon them either in the Country adjoining to *Paris*, or in *Provence* or *Languedoc*, where they are very common, or in the Neighbourhood of *Lisbon*.

Of all the Botanical Writers before *Tournefort*, *Casalpinus* is the only Person who found and describ'd this Fruit, which, he says, is oblong, being two forked Husks, arched and conjoin'd at their Extremities, containing, for the most part, two oblong Seeds in each.

To have this Plant produce Fruit, Monf. *Tournefort* advises its being

planted in a Pot that contains but a small Quantity of Earth; so that the Sap being prevented from dissipating and spending itself upon nourishing new Shoots, will mount the Stems, and swell the Pointal, which becomes the Fruit; and this, he says, was the Method whereby he obtain'd the Fruit of this Plant, of which he has given a Figure in his *Elements of Botany*.

But notwithstanding what Monf. *Tournefort* has related concerning this Matter, I have often observ'd the Fruit upon such Plants as have grown singly on a good Soil; tho' where their Shoots are permitted to entangle with each other, and grow very close, there is seldom any Fruit produced.

PETASITES; Butter-bur.

The Characters are;

It is a Plant with a flosculous Flower, consisting of many Florets, divided into many Parts: sitting on the Embryo, and contain'd in a Cylindrical Empalement, divided also into many Parts: The Embryo afterwards becomes a Seed furnish'd with Down: To which may be added, The Flowers appear before the Leaves.

The Species are;

1. PETASITES; *major, & vulgaris*. C. B. P. Common Butter-bur, or Pestilent-wort.

2. PETASITES; *major, floribus pediculis longis insidentibus*. Raii Syn. Greater Butter-bur, with long Footstalks to the Flowers.

3. PETASITES; *albus, anguloso folio*. J. B. White Butter-bur, with angular Leaves.

4. PETASITES; *minor, alter, tussilaginis folio*. H. R. Par. Lesser Butter-bur, with a Colt's-foot Leaf.

The first Sort here mentioned is used in Medicine: This grows wild in great Plenty by the Sides of Ditches, and in moist Soils in di-

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vers Parts of *England*. The Flowers of this Plant appear in the Beginning of *March*; and after they are past, the green Leaves come up, and grow to be very large.

The second Sort was found by Mr. *Jacob Bobart* in *Oxfordshire*, and sent to the *Physick-Garden* at *Chelsea*: This differs greatly from the former in its manner of Flowering; for the Flower-stems of this Sort rise near two Feet high, and the Flowers grow upon long Foot stalks; whereas the Stems of the common Sort do seldom rise above eight or ten Inches high, and the Flowers do closely surround the Stalks.

The other two Sorts are preserv'd in Botanick Gardens for Variety; but as they have little Beauty, so they are seldom propagated in other Gardens: They do all of them increase greatly by their creeping Roots, and, if plac'd in a moist Soil, will in a short time over-run a large Compass of Ground.

PETROSELINUM; *vide* Apium.

PEUCEDANUM; Hogs-fennel.

The Characters are;

It is a Plant with a Rose and umbellated Flower, consisting of many Petals placed orbicularly, and resting on the Empalement, which becomes a Fruit compos'd of two Seeds, which are almost plain, oval, gently streak'd, and border'd: To these Marks must be added, That the Leaves are winged, narrow, grassy, and divided into three Segments.

The Species are;

1. PEUCEDANUM; *majus, Italicum*. C. B. P. Greater Hogs-fennel.
2. PEUCEDANUM; *minus, Germanicum*. *f. B.* Lesser, German Hogs-fennel, or Sulphur-wort.

There are several other Species of this Plant, which are preserved in some curious Botanick Gardens:

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But as they are Plants of little Beauty or Use, so it would be needless to enumerate their several Varieties in this Place.

The first Sort here mention'd is not very common in *England*, being only to be found in some curious Gardens: But the second Sort (which is directed to be used in Medicine) is found wild in watery Places in several Parts of *England*.

These Plants may be cultivated by sowing their Seeds on a moist Soil in the *Autumn* soon after they are ripe, in which Place they will come strong the succeeding *Spring*, when they should be carefully weeded, and drawn out where they are too close, otherwise they will draw each other up very weak; and the *Autumn* following they may be taken up, and transplanted where they are to remain, in which Place they should be planted at least two Feet asunder; for their Roots will grow very large, and branch out greatly, when they have acquir'd Strength. The second Year after sowing, they will produce Flowers and Seeds, but the Roots will abide many Years.

PHALANGIUM; Spider-wort.

The Characters are;

It is a Plant with a Lily-Flower, compos'd of six Petals, from whose Centre rises the Pointal, which afterwards becomes a roundish Fruit, divided into three Cells, and full of angular Seeds: To these Marks must be added a fibrose Root, in order to distinguish it from the Ornithogalum.

The Species are;

1. PHALANGIUM; *parvo flore, ramosum*. C. B. P. Branched Spider-wort, with a small Flower.
2. PHALANGIUM; *parvo flore, non ramosum*. C. B. P. Unbranched Spider-wort, with a small Flower.

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3. PHALANGIUM; *Africanum, floribus luteis, parvis*. Raii Hist. African Spider-wort with small yellow Flowers.

4. PHALANGIUM; *parvo flore ramosum, foliis fistulosis, annuum*. H. L. Annual - branching Spider - wort, with fistulous Leaves, and a small Flower.

5. PHALANGIUM; *Africanum, foliis cepaceis, floribus spicatis aureis*. Boerb. Ind. African Spider-wort, with Onion Leaves, and Golden Flowers, growing in Spikes, *falsely call'd an Aloe*.

6. PHALANGIUM; *Æthiopicum, ramosum, floribus albis, petalis reflexis*. Hort. Amst. Branchy Ethiopian Spider-wort, with white Flowers, whose Petals are turn'd backward.

The first and second Sorts are abiding Plants, which are propagated in curious Gardens for the sake of their Flowers; and tho' they are not very beautiful, yet, for their long Continuance in Flower, they deserve a Place in the open Borders of every curious Flower-Garden.

These may be propagated either from Seeds, or by parting their Roots: The best Time to sow the Seeds is in *Autumn*, soon after they are ripe, in the Manner directed for Bulbous-rooted Flowers, with which these Plants do agree in their Culture, and the second Year after sowing, they will produce Flowers. The Season for parting their Roots is in *September*; in doing of which, you must observe to preserve a good Head to each Off-set, and not to divide them too small, which will cause them to flower weak the following *Summer*: They delight in a fresh light Earth, and an open Situation.

The third Sort is an annual Plant, which should be sown on a Bed of

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light Earth in *March*; and when the Plants are come up, they must be transplanted where they are to remain, in which Place they must be kept clear from Weeds, which is all the Culture they require. They produce their Flowers in *July*, and their Seeds are perfected in *August*.

The fourth Sort is also annual, but grows very large, in comparison to the last: This commonly rises two Feet high, and divides into many Branches, each of which produces a Spike of Flowers: It is a very hardy Plant; and if the Seeds are permitted to fall in *Autumn*, they will come up in the *Spring*, and produce much stronger Plants, than if sown at that Season, and will flower much sooner: This must have a light dry Soil.

The fifth Sort is preserv'd in Green-houses, with other succulent Plants, amongst which it makes a pretty Variety, there being scarcely a Month in the Year when there are not some of the Spikes of Flowers in Beauty. This was formerly call'd an *Aloe*, which Name is still retain'd by unskilful Persons, tho' it is vastly different therefrom in its whole Appearance. This Plant multiplies very fast by Off-sets, which, tho' produced at some Distance from the Earth, yet do emit Roots of a considerable Length; and when planted, do immediately take in the Earth: They should be planted in Pots of light sandy Earth, and housed in Winter with *Ficoides's*, and other hardy succulent Plants, where they may have free open Air; for they are hardy, and require only to be protected from Frost.

The sixth Sort is also preserved in some curious Gardens, with other Exotick Plants in the Green-house:

house: This is multiply'd by parting the Roots; the best Season for doing this is in *August*, when the Leaves are decay'd; they should be planted in Pots fill'd with light sandy Earth, and housed in Winter with the last: This produces large branching Stems, which are thinly beset with Flowers, that have their Petals reflex'd, and are of a whitish Colour, but continue a long time in Beauty.

PHASEOLOIDES, Kidney-bean Tree; *vulgò*.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards becomes a long Pod, inclosing several Seeds, which are shap'd almost like a Kidney: To which must be added, That it hath pennated Leaves, consisting of an unequal Number of Lobes, which distinguishes it from Phaseolus.

We have but one Species of this Plant at present in *England*, which is;

PHASEOLOIDES; *Carolinianum, frutescens, scandens, foliis pinnatis, floribus caruleis spicatis.* Carolina Kidney-bean Tree; *vulgò*.

The Seeds of this Plant were sent from *Carolina* by Mr. Catesby, in the Year 1724, and distributed to several curious Persons near *London*; from which many Plants have been rais'd, which are very hardy, and propagate very easily by laying down the tender Branches, or from Suckers which are sent from the Root in great Plenty.

The best Season for transplanting these Plants is in the *Spring*, just before they shoot: They will grow in almost any Soil, but thrive best in a rich light Earth.

This Plant is very proper to place among other climbing Shrubs in small Wilderness Quarters, where

if it be supported with strong Stakes, it will rise twelve or fourteen Feet high, and produce many Spikes of fine blue Flowers; and if the Season prove favourable, the Seeds will ripen very well: It is extreme hardy, enduring the severest Cold of our Climate in the open Air, provided it be not too much expos'd to the cold Winds.

PHASEOLUS; Kidney-bean.

The Characters are;

It is a Plant with a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards becomes a long Pod, pregnant with Seeds, for the most Part shaped like a Kidney or Oval: To these Notes are to be added, Leaves growing by three's on each Pedicle, and the Plant for the most Part climbing.

It would be to little Purpose to enumerate all the Varieties of this Plant which have come to Knowledge, in this Place; since *America* does annually furnish us with new Sorts; so that there is no knowing what Varieties there may be produced in *England*: Besides, as they are not likely to be much cultivated here, since the old Sorts are preferable to any of the new ones, for the Kitchen; therefore I shall only first set down a few Sorts which are cultivated for their Flowers, or as Curiosities, and then mention those which are most esteem'd for the Table.

1. PHASEOLUS; *Indicus, flore coccineo, seu puniceo.* Mor. Hist. The Scarlet-bean.

2. PHASEOLUS; *Americanus, perennis, flore cochleato odorato, seminibus fuscis orbiculatis, Caracalla dictus.* H. L. Perennial American Kidney-bean, with sweet-smelling cochleated Flowers, commonly call'd Caracalla.

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3. PHASEOLUS; *Americanus, strumosa radice, flore purpureo, siliqua angustissima*. Plum. American Kidney-bean, with a strumose Root, a purple Flower, and a very narrow Pod.

4. PHASEOLUS; *Canadensis, purpureus, minor, radice vivaci*. Schol. Bot. Small purple Kidney-bean, with a perennial Root.

5. PHASEOLUS; *arbor, Indica incana, siliquis torosis, Kayan dicta*. Raii Hist. Indian Hoary-tree Kidney-bean, with swelling knotted Pods, commonly call'd Pigeon-Pea.

The first of these Plants is very common in the *English* Gardens, being planted for the Beauty of its scarlet Flowers. This Plant spreads itself very far, so that it should be allow'd Room, otherwise it will over-run whatever Plants grow near it. The Season for planting the Seeds of this Plant is in the Beginning of *April*, observing always to do it in dry Weather, otherwise the Seeds will burst and rot. They will produce their Flowers by the Beginning of *July*, and will continue flowering until the Frost prevents them; and their Seeds will ripen in *September*, when they should be gathered, and preserv'd in a dry Place until the succeeding *Spring*, in order to be sown. This Plant being annual, perishes with the first Approach of *Winter*: It will thrive very well in the City, the Smoak of the Sea-coal being less injurious to this Plant than most others, so that it is often cultivated in Balconies, &c. and being supported either with Sticks or Strings, grows up to a good Height, and produces its Flowers very well: It is also planted in some Gardens to cover Arbors and other Seats in the *Summer*-season, to afford Shade, for which Purpose it will do very

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well: But the Seeds must be put in where they are to remain; for the Plants don't bear to be transplanted well.

The second Sort is an abiding Plant, which may also be propagated by Seeds, which should be sown in a moderate Hot-bed in the *Spring*; and when they come up, they must be carefully transplanted into Pots, fill'd with light fresh Earth, which must be plunged into a Hot-bed to facilitate their taking Root; after which they should be inured to bear the open Air by Degrees, into which they should be remov'd when the Season is warm, placing them in a shelter'd Situation; and as they advance, so should they be remov'd into larger Pots, which must be fill'd up with fresh light Earth.

During the *Summer*-season, it must be frequently refresh'd with Water; but in the Winter it must be remov'd into the Green-house, and should have but little Water during that Season. It requires only to be screen'd from Frost, but must have open free Air whenever the Weather will permit, otherwise the Leaves will grow mouldy, and decay the tender Shoots: It produces its scarlet Flowers in *July* and *August*, but seldom perfects its Seeds in this Country. This Plant is very common in *Portugal*, where it is planted to cover Arbours and Seats in Gardens, for which it is greatly esteem'd by the Inhabitants of that Country, and for its beautiful sweet-smelling Flowers; and in that Country it thrives very well in the open Air.

The third Sort is preserv'd in some curious Gardens for Variety; but is a Plant of no great Beauty: This may be propagated by sowing the

the Seeds in the *Spring* upon a Hot-bed; and when they come up, they must be planted in Pots, and treated as the former Sort: It produces its Flowers in *July*, and the Seeds ripen in *September*.

The fourth Sort was brought from *America*, and is preserv'd in curious Gardens, for the sake of its long Flowering: This is an abiding Plant, and should be managed as was directed for the third Sort; and if guarded from Frost, will continue to produce Flowers all the *Winter*-season. It ripens Seeds very well, from which the Plants may be easily propagated.

The fifth Sort is preserv'd as a Curiosity in *England*: But in the *West-Indies* it is frequently planted by the Sides of Alleys in Gardens, to form a Hedge, where they will last many Years without decaying; and will thrive on barren Land, which has been worn out, where scarcely any thing else will prosper; and produce a great Quantity of Fruit, which are sometimes eaten by the Inhabitants; but their chief Use is to feed Pigeons, from whence this Plant had its Name. The Branches, with the ripe Pease and Leaves, are given to Hogs, Horses, and most other Cattle, which fattens them very much. In *England* it is preserv'd in Stoves, being too tender to be kept without artificial Heat in this Climate: It may be propagated from Seeds, (which are generally brought from the *West-Indies* every Year in great Plenty); and when the Plants come up, they should be planted into Pots fill'd with light sandy Earth, and plung'd into a Hot-bed, to promote their Growth: But when they have acquir'd Strength, they should be gradually inur'd to the open Air, into which they may

be removed in *July*, and may remain abroad until the Beginning of *September*, when they must be remov'd into the Stove, placing them where they may have a moderate Heat, observing to refresh them now and then with a little Water; but be very careful not to give it to them in great Quantities, (especially at that Season) which will be very apt to rot their Roots: The second Year these Plants will flower early in the *Spring*, and do many times produce ripe Fruit.

There are at present but three Sorts of *Kidney-beans*, which are cultivated for the Table in *England*, which are:

1. The Common White, or Dutch Kidney-bean.
2. The Lesser Garden Kidney-bean, commonly call'd the Battersea Bean.
3. The Upright, or Tree Kidney-bean.

The first of these was formerly more cultivated in *England* than at present; but is the chief Sort now cultivated in *Holland*, from whence probably it had the Name of *Dutch Kidney-bean*: This Sort rises to a very great Height, and requires to be supported by tall Stakes, otherwise they will spread upon the Ground and rot; so that where this Care is wanting, the Fruit seldom comes to good; which Trouble renders it difficult to cultivate this Sort in Plenty; and the Beans being much broader than the small Sort, render them less valuable in the *London* Markets; which, I suppose, occasion'd their being neglected in *England*.

The second Sort is that which is most commonly cultivated in the Gardens near *London*, and is by far the best Sort we yet know; for the Plant never rambles too far, but

but is always of moderate Growth, so that the Air can easily pass between the Rows, and keep them from rotting: It is also a plentiful Bearer, and the best Bean of all the rest for eating.

The third Sort is also a plentiful Bearer, and never rambles, growing upright in form of a Shrub; but the Beans are much larger than the last, and are not so well colour'd, nor do they eat near so firm and crisp; for which Reasons they are not so generally esteem'd.

These Plants are propagated from Seeds, which must be sown in the Place where they are to remain; for they will not bear transplanting, except it be done while they are very young; and this being pretty troublesome, is very seldom practised, unless for a few early Plants under warm Hedges or Walls; but it is not worth while for the general Crops.

The Season for putting these in the Ground, is the latter End of *March*, or the Beginning of *April*, for an early Crop; but these should have a warm Situation, and a dry Soil, otherwise they will not succeed: you should also observe to put them into the Ground at a dry Season; for Wet so early in the Season will rot the Seeds in the Ground. The manner of planting them, is, to draw shallow Furrows with a Hoe, at about two Feet and an half Distance from each other, into which you should drop the Seeds about two Inches asunder; then with the Head of a Rake draw the Earth over them, so as to cover them about an Inch deep.

If the Season be favourable, the Plants will begin to appear in about a Week's time after sowing, and soon after will raise their Heads

upright; therefore if the Stems thereof are pretty tall above-ground, you should gently draw a little Earth up to them, observing to do it when the Ground is dry, which will preserve them from being injured by sharp Winds; but you should be careful not to draw any of the Earth over their Leaves, which would rot them, or at least greatly retard their Growth. After this they will require no farther Care but to keep them clear from Weeds until they produce Fruit, when they should be carefully gather'd two or three times a Week; for if they are permitted to remain upon the Plants a little too long, the Beans would be too large for eating, and the Plants would be greatly weaken'd thereby.

This first Crop of *Kidney-beans* will continue a Month in good Order, during which time they will produce great Plenty of Beans; therefore, in order to have a Succession of them throughout the Season, you should sow at three different Times, *viz.* in *March* or *April*, in *May*, and toward the latter-end of *June*; which last Crop will continue until the Frost comes on, and destroys 'em.

There are some Persons who raise these in Hot-beds, in order to have them very early: The only Care to be taken in the Management of these Plants, when thus rais'd, is to allow them Room, and give them as much Air as can be conveniently, when the Weather is mild; as also to let them have but a moderate Heat; for if the Bed be over-hot, they will either burn, or be drawn up so weak as never to come to good.

The Manner of making the Hot-bed being the same as for *Cucumbers*, &c. need not be repeated in this

this Place; but only observe, when the Dung is equally levell'd, to lay the Earth about four or five Inches thick; and let the great Steam of the Bed pass off before you sow the Seeds: The Time for doing this, must be proportion'd to the Season when you would have the Beans for the Table; but the surest Time for a Crop is about a Week in February.

It is also a good Method which some use, to have *French Beans* earlier than they can be obtain'd in the common Ground, To make a gentle Hot-bed about the Middle of March, which may be arched over with Hoops, and covered with Mats, in this they sow their *Kidney-beans* in Rows pretty close together, so that a small Bed will contain a great Number of Plants, these they bring up hardily, inuring 'em to the open Air by Degrees; and in the Beginning of April, when the Weather is settled, they prepare some warm Borders under Walls or Hedges; then they take them up from the Hot-bed, preserving as much Earth as possible to their Roots, and plant them in the Borders at the Distance they are to remain: These, if they take Root kindly, will produce Beans at least a Fortnight before those sown in the common Ground.

The Manner of saving the Seeds of these Plants, is to let a few Rows of them remain ungather'd in the Height of the Season; for if you gather from the Plants for some time, and afterwards leave the Remaining for Seed, their Pods will not be near so long and handsome, nor will the Seed be so good: In the *Autumn*, when you find they are ripe, you should in a dry Season pull up the Plants, and spread them abroad to dry; after

which, you may thresh; out the Seed, and preserve it in a dry Place for Use.

PHILLYREA; Mock-Privet.

The Characters are;

The Leaves grow by Pairs opposite to each other, and are Ever-green: The Flower consists of one Leaf, is Bell-shap'd, and divided into four Parts at the Top: The Pointal, which rises from the Centre of the Flower-cup, afterwards becomes a spherical Flower containing one round Seed.

The Species are;

1. PHILLYREA; *latifolia levis*. C. B. P. The Broad-leav'd true *Phillyrea*.

2. PHILLYREA; *latifolia, spinosa*. C. B. P. Ilex-leaf'd *Phillyrea*. *vulgô*.

3. PHILLYREA; *folio Alaterni*. J. B. *Phillyrea*, with an *Alaternus* Leaf.

4. PHILLYREA; *folio ligustri*. C. B. P. Privet-leaf'd *Phillyrea*.

5. PHILLYREA; *angustifolia, prima*. C. B. P. Narrow-leaf'd *Phillyrea*.

6. PHILLYREA; *angustifolia, secunda*. C. B. P. Rosemary-leaf'd *Phillyrea*; *vulgô*.

7. PHILLYREA; *Olea Ephesiaca, folio*. Hort. Chelf. Pluk. Phyt. Olive-leaf'd *Phillyrea*.

8. PHILLYREA; *latifolia levis, foliis ex luteo variegatis*. Cat. Plant. Hort. The true *Phillyrea*, with strip'd Leaves.

These Plants are most of them Natives of the Southern Parts of France, Spain, and Italy, but are hardy enough to endure the Cold of our Climate in the open Air: They have been formerly in great Request for Hedges, and to cover Walls; for both which Purposes they are very improper; because they shoot so fast in the Spring and Summer Months, that it is very troublesome

some to keep such Hedges in Order: Besides, all these Sorts with broad Leaves do naturally produce their Branches so far asunder, that they can never be reduc'd to a thick handsome Hedge; for altho' by frequently clipping the extreme Parts of the Shoots you force out some Side-branches, which render it thick on the Outside, yet the inner Branches are very far asunder, and being of a pliable Nature, are often displac'd by strong Winds; or if there happen to fall much Snow in *Winter*, so as to lie upon these Hedges, it often displaces them so much as not to be recover'd again in some Years; for which Reasons they are not so much in use for Hedges as they were some Years past: nor are they so often planted to cover Walls; for it is a very difficult Task to keep them close to the Wall; for their Branches being vigorous, do commonly grow to some Distance from the Wall, and harbour all sorts of Insects and Filth: besides, their Leaves being large, and growing pretty far asunder upon the Branches, they appear naked, especially when they are kept closely clipt.

But all these Sorts of Trees are very proper to intermix with other Ever-greens, to form Clumps, Amphitheatres, or to plant round the Sides of Wildernesses of Ever-green Trees, where being placed among other Trees of the same Growth, they will afford a pleasing Variety.

The three first Sorts will grow to the Height of twenty Feet, or more, and may be train'd up to regular Heads: but the narrow-leaf'd Sorts seldom rise above fourteen or sixteen Feet high with us; so that they will be of a proper Size to place in a Line before the Broad-

leaf'd Sorts, where being intermix'd with *Hollies*, *Alaternus's*, *Arbutus's*, and some other Sorts, they will make a beautiful Prospect.

These Plants are propagated either from Seeds or Layers; but the latter being the most expeditious Method in *England*, is chiefly prefer'd: The best time to lay them down is in *March*, when you should dig the Ground round the Plants intended to lay, making it very loose; then making choice of a smooth Part of the Shoot, you should make a Slit upwards (in the manner as is practis'd in laying of *Carnations*;) and then bend the Branch gently down to the Ground, making a hollow Place with your Hand to receive it, and having placed the Part which was slit in the Ground, so as that the Slit may be open, you should fasten it down with a forked Stick, that it may remain steady, covering that Part of the Branch with Earth about three Inches thick, observing to keep the upper-part erect. In dry Weather these Layers should be water'd, which will greatly facilitate their Rooting; you must also keep 'em clear from Weeds, which if suffer'd to grow up amongst them, will prevent their taking Root.

The *March* following many of these Plants will be rooted, at which time they may be taken off, and carefully planted in a Nursery, where they may be train'd up three or four Years in the manner you intend them to grow; during which time you should dig the Ground between the Rows, and cut about the Roots of the Plants every Year, which will cause 'em to strike out strong Fibres, so as to support a good Ball of Earth when they are remov'd; you should also

also support their Stems with Stakes, in order to make them straight, otherwise they are very apt to grow crooked and unightly.

When the Plants have been thus manag'd three or four Years, you may transplant them into the Places where they are design'd to remain: The best time for this Work is the latter-end of *March*, or the Beginning of *April*, just before the Plants begin to shoot: but in removing them, you should dig round their Roots, and cut off all downright or strong Roots which have shot out to a great Distance, that you may the better preserve a Ball of Earth to each Plant, otherwise they are subject to miscarry: And when you have plac'd them in their new Quarters, you should lay some Mulch upon the Surface of the Ground, to prevent its drying; and give them some Water twice a Week in very dry Weather: but do not repeat it too often, nor give it to them in too great Quantities, which will rot the new Fibres, and prevent their Growth. You should also support the Plants with Stakes until they have taken fast hold of the Earth, to prevent their being turn'd out of the Ground, or displac'd by the Winds, which will destroy the Fibres that were newly put out, and greatly injure the Plants. These Trees delight in a middling Soil, which is neither too wet and stiff, nor too dry; tho' the latter is to be preferr'd to the former, provided it be fresh.

The Sort with strip'd Leaves is at present pretty rare, and somewhat tenderer than the others (as are most Sorts of variegated Plants less capable to endure the Cold, than those of the same kinds which are plain; the striping of Plants always proceeding from their Weak-

ness:) This is preserv'd in some Gardens as a Curiosity; but may be propagated in the same manner with the former.

Those Sorts with small Leaves, are commonly two Years before they take Root when lay'd, therefore they should not be disturb'd sooner; for the railing them out of the Ground does greatly retard their Rooting.

PHLOMIS; The Sage-Tree, or Jerusalem-Sage.

The Characters are;

It hath a labiated Flower consisting of one Leaf, whose Upper-lip (or Helmet) which is crested, does wholly rest upon the Under-lip (or Beard) which is divided into three Parts, and extends a little beyond the Upper-lip: The Pointal rises out of the Flower-cup, accompany'd with four Embryo's, which afterwards become so many oblong Seeds, shut up in a Husk, or a pentagonal Tube, which was before the Flower-Cup.

The Species are;

1. PHLOMIS; *fruticosa, salvia folio, latiore & rotundiore.* Tourn. Broad-leav'd Sage-Tree; *vulgò*.

2. PHLOMIS; *fruticosa, salvia folio, longiore & angustiore.* Tourn. Narrow-leav'd Sage-Tree; *vulgò*.

3. PHLOMIS; *fruticosa, humilis, latifolia, candidissima, floribus luteis.* Aët. Phil. Low Shrubby Sage-Tree, with broad hoary Leaves, and yellow Flowers.

4. PHLOMIS; *Narbonensis, Hormini folio, flore purpurascente.* Tourn. Narbon Jerusalem Sage, with a Clary Leaf, and purplish Flower.

5. PHLOMIS; *Hispanica, candidissima, herbacea.* Tourn. Spanish Jerusalem Sage, with very hoary Leaves.

6. PHLOMIS; *Lychnitis.* Clus. Hist. Narrow-leav'd Jerusalem Sage.

7. PHLOMIS;

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7. PHLOMIS; *Samia, herbacea, lunariae folio*. T. Cor. Herbaceous Samian Jerusalem Sage, with a Moonwort Leaf.

8. PHLOMIS; *Orientalis, foliis laciniatis*. T. Cor. Eastern Jerusalem Sage, with jagged Leaves.

9. PHLOMIS; *Orientalis, lutea, herbacea, latifolia, verticillata. Act. Phil.* Broad-leav'd Herbaceous Jerusalem Sage from the *Levant*, with yellow Flowers growing in Whorles.

The three first-mention'd Sorts grow to be Shrubs of a middling Size, and are proper to intermix with other Sorts of Plants which are of the same Growth in small Wilderness Quarters, where, by the Diversity of their hoary Leaves, their large Spikes of yellow Flowers, and their long Continuance in flower, they make an agreeable Variety.

These Plants have been preserv'd in Pots, and placed in the Green-house in Winter among other tender Exoticks: but they are hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted in a dry Soil, and have a warm Situation; and are rarely injured by Cold, unless in a very severe Frost.

They are propagated by Cuttings in this Country; for their Seeds do seldom ripen well in *England*, except in very warm dry Seasons. The best time to plant these Cuttings is in *May*, that they may have good Roots before Winter: They should be planted in a Bed of fresh light Earth, and shaded from the Sun until they have taken Root; after which they will require no farther Care, but only to keep them clear from Weeds until the following Spring, when they may be removed to the Places

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where they are design'd to be continu'd.

The best Season for transplanting them is in *March*, before they begin to shoot, observing to preserve a Ball of Earth to the Root of each Plant, as also to water 'em until they have taken Root: And in order to form them into a regular Shape, they should be stak'd, and their Stems kept constantly fasten'd thereto, until they arrive at the Height you design 'em; then you may suffer their Branches to shoot out on every Side, to make a handsome Head; in order to which, you should prune off such Branches as grow irregular to either Side, which must always be perform'd in Summer; for if they are wounded in Winter, the Cold does often injure the Plants, by entering the Wounds.

The Soil in which they are placed should not be dung'd, for that causes them to grow too fast, whereby their Shoots are too replete with Moisture, and so less capable to endure the Cold; whereas if they are planted upon a dry, barren, rocky Soil, they are seldom injured by Cold, which is the Case of most of the same Class of Plants with Lip-flowers.

The other Sorts are all of them propagated by parting of their Roots, which should be done in the Spring of the Year, observing to preserve a leading Bud to each Off-set: These should also be placed in a dry, rocky, or gravelly Soil, in which they will thrive much better than if planted in a richer Ground, and will endure the Cold of our ordinary Winters extremely well in the open Air.

These are Plants of no great Beauty, but are preserved in the Gardens

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Gardens of those who are fond of Variety. A Tea made with the Leaves of these Plants, is accounted very good for sore Throats.

PHYTOLACCA; American Night-shade.

The Characters are;

The Flower consists of several Leaves, which are placed in a circular Order, and expand in form of a Rose; out of whose Centre rises the Pointal, which afterwards becomes a soft Fruit, or almost globular Berry full of Seeds, placed orbicularly: To which should added, that the Flowers and Fruit are produced on a Bunch like Currants.

The Species are;

1. PHYTOLACCA; *Americana, majori fructu.* Tourn. American Night-shade, with large Fruit, commonly call'd, Virginian Poke or Porke Phylick.

2. PHYTOLACCA; *Americana, minori fructu.* Tourn. American Night-shade, with lesser Fruit.

The first of these Plants is very common in Virginia, New-England, and Maryland, where the Inhabitants take a spoonful or two of the Juice of the Root, as a familiar Purge: The Berries thereof are full of a purple Juice, which gives a fine Tincture to Paper, from whence it hath the Name; but it will not abide long.

It may be propagated by sowing the Seeds in the Spring, upon a Bed of light rich Earth; and when they come up, they should be transplanted into a Bed of rich dry Earth about two Feet asunder; for they grow to be very large, especially if the Soil be good. When they have taken Root, they will require no farther Care but only to clear 'em from Weeds, and in the Autumn they will produce their Flowers and Fruit: But when

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the Frost comes on, it will cut down the Tops of these Plants, which constantly decay in Winter; but their Roots will abide in the Ground, and come up again the succeeding Spring. There is no great Beauty in this Plant; but, for Variety, a few of them may be placed in the Borders of large Gardens, since they require but little Culture.

The Sort with lesser Fruit is tenderer than the former, and requires to be placed in an artificial Heat in Winter, otherwise they will not endure the Cold of our Winters in England: This is also propagated from the Seeds, which should be sown upon a moderate Hot-bed in the Spring; and when the Plants come up, they should be transplanted each into a separate small Pot fill'd with light fresh Earth, and plung'd into another moderate Hot-bed to bring them forward: but when they have acquired some Strength, they should be inured to bear the open Air by Degrees, into which they may be removed in July, observing to shift them into larger Pots, as their Roots shall require, and place them where they may be shelter'd from strong Winds.

In this Situation they may remain 'till the Beginning of September, when they should be remov'd into the Stove, placing them where they may have a temperate Warmth; and during the Winter Season you should frequently refresh them with Water, but they must not have it in too great Quantities.

These Plants will grow to be three Feet high, and may be train'd up with regular Stems and Heads; they will continue three or four Years, if carefully preserv'd, and continue to produce Bunches of small

P I

Small scarlet Berries throughout the whole Year; which affords a pleasing Variety, amongst other Exotics in Winter, when few other things are in Beauty: The Berries thereof are full of a beautiful red Juice, which will stain Paper extremely fine, but will not continue.

PILOSELLA; *vide* Hieracium.

PIMPINELLA; Burnet.

The Characters are;

The Flower consists of one Leaf, which expands in a circular Form, and is generally cut into four Segments, to the Center, accompanied with many Chives, or a tufted Pointal; the Flower-cup afterwards becomes a Fruit, for the most part sharp-pointed and Quadrangular; having sometimes but one Cell, and at other times two Cells, which are full of oblong Seeds.

The Species are;

1. PIMPINELLA; *sanguisorba, minor levis*. C. B. P. Common or lesser Burnet.

2. PIMPINELLA; *sanguisorba, major*. C. B. P. Great Burnet.

3. PIMPINELLA; *major, praalta, auriculata, Sabauda*. Bocc. Mus. Great rigid tall Burnet, with auriculated Leaves.

4. PIMPINELLA; *maxima, Canadensis*. Corn. Greatest Canada Burnet.

There are some other Species of this Plant, which are preserved in curious Botanick Gardens for Variety: But those here mentioned are what I have observed in the English Gardens.

The common Burnet is found wild in great Plenty upon dry chalky Hills, in divers Parts of England; yet is often cultivated in Gardens for medicinal Uses; though the Herb gather'd on its native

P I

Place of Growth, is much stronger, and fitter for such Purposes.

The second Sort is found growing in moist Meadows, and other wet Soils in divers Parts of England, and is rarely cultivated in Gardens.

The other two Sorts are Strangers to our Country, but are hardy enough to endure the Cold of our Climate in the open Air. These may be propagated either by sowing of the Seeds, or parting their Roots.

The best Time for parting their Roots, is in the Autumn, that they may take good Root before the Drought of the Spring hinders their Growth. They should be planted in Beds of light dry Earth, about ten Inches or a Foot asunder, for if they have not Room to spread, they will rot each other. In May they will shoot up to flower; but if you would preserve the Roots, the Stems should be constantly cut off, for if they are permitted to feed, they seldom remain long after.

They may also be propagated by sowing their Seeds upon a Bed of light Earth in the Spring, and when the Plants are come up, they should be transplanted out into a Bed of fresh Earth, at the Distance before-mention'd, observing to water and shade them until they have taken Root, after which they will require no farther Care, but to keep them clear from Weeds. The first Sort is what should be used in Medicine, and the Leaves of that are also put into cool Tankards in the Heat of Summer, as a Cordial Herb.

PINASTER; *vide* Pinus Sylvestris.

PINUS; The Pine Tree.

The Characters are;

It hath amentaceous Flowers (or
S 2 Catkins)

Catkins) which are produced at remote Distances from the Fruit on the same Tree; the Seeds are produced in squamous Cones; to which should be added, that the Leaves are longer than those of the Firr-Tree, and are produced by Pairs out of each Sheath.

The Species are;

1. PINUS; *sativa*. C. B. P. The manured Pine.

2. PINUS; *sylvestris*. C. B. P. The Pinaster or wild Pine.

3. PINUS; *sylvestris, foliis brevibus, glaucis, conis parvis, albentibus*. Ray Hist. The Scotch Pine, commonly called the Scotch Firr.

4. PINUS; *Americana, foliis prelongis, subinde ternis, conis plurimis confertim nascentibus*. Rand. American Pine, with longer Leaves coming out by Threes, and many Cones growing in a Cluster, commonly called, The Cluster Pine.

5. PINUS; *Americana, ex uno folliculo setis, longis tenuibus, triquetris, ad unum angulum, per totam longitudinem, minutissimis crenis asperatis*. Pluk. Amalth. Lord Weymouth's Pine; *vulgô*.

The Culture and Management of these Trees, being the same as for Firrs, is fully set down adjoining to that Article, for which the Reader is desired to turn back to *Abies*.

PISTACHIA; *vide* Terebinthus.

PISUM; Pea.

The Characters are;

It is a Plant with a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards becomes a long Pod, full of roundish Seeds; to which must be added, fistulous Stalks, for the most part weak, which the Leaves embrace in such a Manner, that they seem to be perforated by them; but the other Leaves grow by Pairs along the Mid-rib, ending in a Tendril.

The Species are;

1. PISUM; *hortense majus, flore fructuque albo*. C. B. P. The greater Garden Pea with white Flowers and Fruit.

2. PISUM; *præcox, Anglicum*. Boerb. Ind. Hot-spur Pea; *vulgô*.

3. PISUM; *humile, caule firmo*. Tourn. The Dwarf Pea.

4. PISUM; *humile Gallicum*. Boerb. Ind. French Dwarf Pea.

5. PISUM; *cortice eduli*. Tourn. Pea with an esculent Husk.

6. PISUM; *siliquâ carnosâ, incurvâ, seu falcatâ, eduli*. Raii Hist. The Sickle Pea; *vulgô*.

7. PISUM; *arvense, fructu albo*. C. B. P. Common white Pea.

8. PISUM; *arvense, fructu viridi*. C. B. P. Green Rouncival Pea.

9. PISUM; *arvense, fructu cinereo*. C. B. P. The Grey Pea.

10. PISUM; *arvense, flore roseo, fructu variegato*. Raii Hist. Maple Rouncival Pea.

11. PISUM; *umbellatum*. C. B. P. The Rose Pea or Crown Pea.

12. PISUM; *maximum, fructu nigra lineâ maculato*. H. R. Par. The Spanish Morotto Pea.

13. PISUM; *hortense, siliquâ maximâ*. H. R. Par. The Marrow-fat or Dutch Admiral Pea.

14. PISUM; *fructu maximo, ex viridi obsoleto*. Boerb. Ind. The Union Pea.

15. PISUM; *spontanæum, maritimum Anglicum*. Park. Theat. English Sea Pea.

16. PISUM; *arvense, fructu è luteo virescente*. C. B. P. Pig Peas.

There are several other Varieties of the Garden Peas, which differ in the Colour of their Flowers and Fruit, and are by some Persons distinguished by Names as distinct Sorts; but as they are very subject to vary when sown two or three

Years

Years in the same Place, so there can be no doubt of their being seminal Variations, which are not worth enumerating in this Place.

The *English Sea Pea*, is found wild upon the Shore in *Sussex*, and several other Counties in *England*; this was first taken Notice of in the Year 1555, between *Oxford* and *Aldborough*, where it grew upon the Heath, where nothing, no not Grass, was ever seen to grow, and the poor People being in Distress, by Reason of the Dearth of that Year, gathered large Quantities of these *Peas*, and so preserved themselves and Families: This is mentioned by *Stow* in his *Chronicle*, and *Cambden* in his *Britannia*. But they were both mistaken, in imagining that they were *Peas* cast on Shoar by a Shipwreck, seeing they grow in divers other Parts of *England*, and are undoubtedly a different Species from the common *Pea*.

The Sixteenth Sort is greatly cultivated in the Fields in *Dorsetshire*, where they are known by the Name of *Pig Peas*, the Inhabitants making great Use of them to feed their Hogs. These are also often brought up to *London* and sold for the same Purpose.

I shall now proceed to set down the Method of cultivating the several Sorts of Garden *Peas*, so as to continue them throughout the Season.

It is a common Practice with the Gardeners near *London*, to raise *Peas* upon Hot-beds, to have them very early in the Spring, in order to which, they sow their *Peas* upon warm Borders under Walls or Hedges, about the Middle of *October*; and when the Plants come up, they draw the Earth up gently to their Stems with a Hoe, the better

to protect them from Frost; in these Places they let them remain until the latter End of *January*, or the Beginning of *February*, observing to earth them up from time to time as the Plants advance in Height (for the Reasons before laid down) as also to cover them in very hard Frost with *Peas-haulm*, *Straw*, or some other light Covering, to preserve them from being destroy'd, then at the Time before-mention'd, they make a Hot-bed (in proportion to the Quantity of *Peas* intended) which must be well work'd in laying the Dung, that the Heat may not be too great: The Dung should be laid about two Feet thick or somewhat more, according as the Beds are made earlier or later in the Season; when the Dung is equally levelled, then the Earth (which should be light and fresh, but not over rich) must be laid on about Six Inches thick, laying it equally all over the Bed: This being done, the Frames (which should be two Feet deep on the Back-side, and about fourteen Inches in Front) must be put on, and cover'd with Glasses, after which it should remain three or four Days, to let the Steam of the Bed pass off, before you put the Plants therein; observing every Day to raise the Glasses either with Bricks or Stones, to give Vent for the rising Steam to pass off; then when you find the Bed of a fine moderate Temperature for Heat, you should with a Trowel, or some other Instrument, take up the Plants as carefully as possible, to preserve a little Earth to their Roots, and plant them into the Hot-bed in Rows, about a Foot asunder, and the Plants should be set about an Inch and Half, or two Inches distance from each other in the Rows; observing

observing to water and shade them until they have taken Root; after which you must be careful to give them Air, at all Times when the Season is favourable, otherwise they will draw up very weak, and be subject to grow mouldy and decay. You should also draw the Earth up to the Shanks of the Plants, as they advance in Height, and keep them always clear from Weeds; the Water they should have, must be given them sparingly, for if they are too much water'd, it will cause them to grow too rank, and sometimes rot off the Plants at their Shanks, just above Ground; when the Weather is very hot, you should cover the Glasses with Mats in the Heat of the Day, to screen them from the Violence of the Sun, which is then too great for them, causing their Leaves to flag, and their Blossoms to fall off without producing Pods; as will also the keeping of the Glasses too close at that Season. But when the Plants begin to fruit, they should be water'd oftener, and in greater Plenty than before; for by that Time the Plants will have nearly done growing, and the often refreshing them will occasion their producing a greater Plenty of Fruit.

The Sort of *Pea* which is always used for this Purpose, is the Dwarf; for all the other Sorts ramble too much to be kept in Frames: the Reason for sowing them in the common Ground, and afterwards transplanting them on a Hot-bed, is also to check their Growth, and cause them to bear in less Compass; for if the Seeds were sown upon a Hot-bed, and the Plants continued thereon, they would produce such luxuriant Plants as not to be contained in the Frames, and would bear but little Fruit.

The next Sort of *Pea*, which is sown to succeed those on the Hot-beds, is the *Hot-spur*, of which there are reckon'd three or four Sorts, as the *Master's Hot-spur*, the *Reading Hot-spur*, and some others; which are very little differing from each other, except in their early Bearing, for which the *Master's Hot-spur* is chiefly preferr'd; tho' if either of these Sorts are cultivated in the same Place for three or four Years, they are apt to degenerate and be later in Fruiting, for which Reason most curious Persons procure their Seeds annually from some distant Place, and in the Choice of these Seeds, if they could be obtained from a colder Situation, and a poorer Soil, than that in which they are to be sown, it will be much better than on the contrary, and they will come earlier in the Spring.

These must also be sown on warm Borders, towards the latter End of *October*, and when the Plants are come up, you should draw the Earth up to their Shanks in the Manner before directed, which should be repeated as the Plants advance in Height (always observing to do it when the Ground is dry) which will greatly protect the Stems of the Plants against Frost; and if the Winter should prove very severe, it will be of great service to the Plants, to cover them with Peas-haulm, or some other light Covering, which should be constantly taken off in mild Weather, and only suffer'd to remain on during the Continuance of the Frost; for if they are kept too close, they will be drawn very weak and tender, and thereby be liable to be destroy'd with the least Inclemency of the Season.

In the Spring you must carefully clear them from Weeds, and draw some fresh Earth up to their Stems; but do not raise it too high to the Plants, lest by burying their Leaves you should rot their Stems, as is sometimes the Case, especially in wet Seasons. You should also observe to keep them clear from Vermin, which if permitted to remain amongst the Plants, will increase so plentifully, as to devour the greatest Part of them; the chief of the Vermin which infect *Peas*, are the *Slugs*, which lie all the Day in the small Hollows of the Earth near the Stems of the Plants, and in the Night-time come out and make terrible Destruction of the *Peas*; and these chiefly abound in wet Soils, or where a Garden is neglected and over-run with Weeds; therefore you should make the Ground clear every Way round the *Peas*, to destroy their Harbours, and afterwards in a fine, mild Morning, very early, when these Vermin are got abroad from their Holes, you should slack a Quantity of *Lime*, which should be sown hot over the Ground, pretty thick, which will destroy the Vermin, where-ever it happens to fall upon them; but will do very little Injury to the *Peas*, provided it be not scatter'd too thick upon them: This is the best Method I could ever find to destroy these troublesome Vermin.

If this Crop of *Peas* doth hit, it will immediately succeed those on the Hot-bed; but for fear this should miscarry, it will be proper to sow two more Crops, at about a Fortnight distance from each other; so that there may be the more Chances to succeed: This will be sufficient until the Spring of the Year, when you must sow

at least two more Crops of these *Peas*; one toward the latter End of *January*, and the other a Fortnight after: these two later Sowings, will be sufficient to continue the early Sort of *Peas* through the first Season, and after this it will be proper to have some of the large Sorts of *Peas* to succeed them; in order to which, you should sow some of the *Spanish Morotto*, which is a great Bearer, and a hardy Sort of *Pea*, about the Middle of *February*, upon a clear open Spot of Ground; these must be sown in Rows, about two Feet and a Half asunder, and the *Peas* should be dropped in the Drills about an Inch and a half distance, covering them about two Inches deep with Earth, being very careful that none of them lie uncovered, which will draw the *Mice*, *Pigeons* or *Rooks* to attack the whole Spot; and it often happens by this Neglect, that a whole Plantation is devour'd by these Creatures; whereas when there are none of the *Peas* left in sight, they do not so easily find them out.

About a Fortnight after this, you should sow another Spot, either of this Sort, or any other large Sort of *Pea* to succeed those, and then continue to repeat sowing once a Fortnight till the Middle or latter End of *April*, some of these Kinds, only observing to allow the *Marrow-fats*, and other very large Sorts of *Peas*, at least three Feet between Row and Row; and the *Rose-Pea* should be allowed at least eight or ten Inches distance Plant from Plant, in the Rows; for these grow very large, and if they have not Room allowed them, they will spoil each other, by drawing up very tall, and will produce no Fruit.

When these Plants come up, the Earth should be drawn up to their Shanks (as was before directed) and the Ground kept entirely clear from Weeds; and when the Plants are grown eight or ten Inches high, you should stick some rough Boughs, or brush Wood, into the Ground close to the *Peas*, for them to ramp upon, which will support them from trailing upon the Ground, which is very apt to rot the large growing Sorts of *Peas*, especially in wet Seasons: besides, by thus supporting them, the Air can freely pass between them, which will preserve the Blossoms from falling off before their Time, and occasion them to bear much better, than if permitted to lie upon the Ground; and there will be Room to pass between the Rows to gather the *Peas* when they are ripe.

The Dwarf Sorts of *Peas* may be sown much closer together, than those before-mentioned; for these seldom rise above a Foot high, and rarely spread above half a Foot in width; so that these need not have more Room than two Feet Row from Row, and about an Inch asunder in the Rows. These will produce a good Quantity of *Peas*, provided the Season be not over dry; but they seldom continue long in bearing, so that they are not so proper to sow for the main Crop, when a Quantity of *Peas* is expected for the Table: their chief Excellency being for Hot-beds, where they will produce a greater Quantity of *Peas* (provided they are well manag'd) than if expos'd to the open Air, where the Heat of the Sun soon dries them up.

The *Sickle Pea* is much more common in *Holland* than in *England*, it being the Sort mostly cultivated in that Country; but in

England they are only propagated by curious Gentlemen for their own Table, and are rarely brought into the Markets; this Sort the Birds are very fond of; and if they are not prevented, do many times destroy the whole Crop. This should be planted in Rows, about two Feet and a half asunder, and be managed as hath been directed for the other Sorts.

The *Grey*, and other large Winter *Peas*, are seldom cultivated in Gardens, because they require a great deal of Room; but are usually sown in Fields, in most Parts of *England*. The best Time for sowing of these, is about the Beginning of *March*, when the Weather is pretty dry, for if they are put into the Ground in a very wet Season, they are apt to rot, especially if the Ground be cold; these should be allowed at least three Feet distance Row from Row, and must be sown very thin in the Rows; for if they are sown too thick, the Haulm will spread so as to fill the Ground, and ramble over each other, which will cause the Plants to rot, and prevent their Bearing.

The best Method to sow these *Peas*, is, to draw a Drill with a Hoe by a Line, about two Inches deep, and then scatter the Seeds therein, after which, with a Rake you may draw the Earth over them, whereby they will be equally covered; and this is a very quick Method for Gardens; but where they are sown in Fields, they commonly make a shallow Furrow with the Plough, and scatter the Seeds therein, and then with a Harrow they cover them over again. After this, the great Trouble is to keep them clear from Weeds, and draw the Earth up to the

the Plants; this, in such Countries where Labour is dear, is a great Expence, to do it by Hand with a Hoe; but this may be easily effected with a Breast-hoeing Plough, which may be drawn through between the Rows, which will entirely eradicate the Weeds, and by stirring of the Soil, render it mellow, and greatly promote the Growth of the Plants.

When any of these Sorts are intended for Seed, there should be as many Rows of them left ungather'd, as may be thought necessary to furnish a sufficient Quantity of Seed; these must remain until their Pods are changed brown, and begin to split; when you should immediately gather them up together with the Haulm, and if you have not Room to stack them up until Winter, you may thrash them out so soon as they are dry, and put them up in Sacks for Use: But you must be very careful not to let them remain too long abroad after they are ripe, for if Wet should happen, it would rot them, and Heat after a Shower of Rain, would cause their Pods to burst and cast forth their Seeds, so that the greatest Part of them would be lost; but, as I said before, it is not advisable to continue sowing of the same Seed longer than two Years, for the Reasons there laid down; but rather to exchange your Seeds every Year, or every two Years at least, whereby you may always expect to have them prove well.

PLANTAIN TREE; *vide* Musa.

PLANTING; Although the Method of *Planting* the various Sorts of Trees, is fully set down, under the several Articles where each Kind is mentioned, yet it may not be amiss to say something in general upon that Head in this Place;

which shall be set down as briefly as possible. And,

First, The first Thing in the *Planting* of Trees, is to prepare the Ground (according to the different Sorts of Trees you intend to plant) before the Trees are taken out of the Earth; for you should suffer them to remain as little Time out of the Ground as possible.

In taking up the Trees, you should carefully dig away the Earth round their Roots, so as to come at their several Parts to cut them off, for if they are torn out of the Ground without Care, the Roots will be broken and bruised very much, to the great Injury of the Trees. When you have taken them up, the next thing is to prepare them for *Planting*, in doing of which, there are two Things to be principally regarded; the one is to prepare the Roots, and the other to prune their Heads, in such a Manner, as may be most serviceable in promoting the future Growth of the Trees.

And first, as to the Roots; all the small Fibres are to be cut off, as near to the Place from whence they are produc'd, as may be (excepting such Trees as are to be replanted, immediately after they are taken up) otherwise the Air will turn all the small Roots and Fibres black; which, if permitted to remain on, when the Tree is planted, will grow mouldy and decay, and thereby spoil all the new Fibres which are produc'd; so that many times the Trees miscarry for want of duly observing this: After the Fibres are all cut off, you should prune off all the bruised or broken Roots smooth, otherwise they are apt to rot and distemper the Trees; you should also cut out all irregular Roots which cross each other,

other, and all downright Roots (especially in Fruit-Trees) must be cut off; so that when the Roots are regularly prun'd, they may in some measure resemble the Fingers of a Hand, when spread open; then you should shorten the larger Roots, in proportion to the Age and Strength of the Tree; as also the particular Sorts of Trees, are to be consider'd, for the *Walnut*, *Mulberry*, and some other tender-rooted Kinds, should not be pruned so close, as the more hardy Sorts of Fruit or Forest Trees, which in young Fruit Trees, such as *Pears*, *Apples*, *Plumbs*, *Peaches*, &c. that are one Year old, from budding or grafting, may be left about eight or nine Inches long; but in older Trees, they must be left of a much greater Length; but this is to be understood of the larger Roots only, for the small ones must be chiefly cut quite out, or pruned very short, their extream Parts, which are generally very weak, do commonly decay after moving, so that it is the better Way intirely to displace them.

The next thing is the Pruning of their Heads, which must be differently perform'd in different Trees, and the Design of the Trees, must also be consider'd; for if they are intended for Walls or Espaliers, it is the better way to plant them with the greatest Part of their Heads, which should remain on until the Spring, that the Trees begin to shoot, when they must be cut down to five or six Eyes (as is fully set down in the several Articles of the various Kinds of Fruit) being very careful in doing of this, not to disturb the new Roots.

But if the Trees are design'd for Standards, you should prune off all the small Branches close to the

Places where they are produced, as also irregular Branches which cross each other, and by their Motion when agitated by the Wind, do rub and bruise each other, so as to occasion many times great Wounds in those Places; besides, it makes a disagreeable Appearance to the Sight, and adds to the Closeness of its Head, which should always be avoided in Fruit Trees; whose Branches should be preserved as far distant from each other, as they are usually produced when in a regular way of Growth (which is in all Sorts of Trees proportionable to the Size of their Leaves, and Magnitude of their Fruit (for when their Heads are very thick (which is often occasioned by the unskilful shortening of their Branches) the Sun and Air cannot freely pass between their Leaves, so that the Fruit must be small and ill tasted. But to return; After having displaced these Branches, you should also cut off all such Parts of Branches, as have by any Accident been broken or wounded; for these will remain a disagreeable Sight, and often occasion a Disease in the Tree. But you should, by no means, cut off the main, leading Shoots, as is, by too many, practis'd, for those are necessary to attract the Sap from the Root, and thereby promote the Growth of the Tree: For, from several Experiments which I made the Winter 1729, by cutting off the Branches of several Sorts of Trees, and putting them into Phials fill'd with Water, whose Tops were closely cover'd, to prevent the evaporating of the Water, I found, that those Shoots whose leading Buds were preserved, did attract the Moisture in much greater Quantity, than those Shoots whose

whose Tops were cut off: And from several Experiments made by the Reverend Mr. *Hales*, we find, that great Quantities of Moisture are imbib'd at Wounds, where Branches are cut off; so that by thus shortening the Branches, the Wet, which generally falls in great Plenty during the Winter Season, is plentifully imbib'd, and for want of Leaves to perspire it off, mixes with the Sap of the Trees, and thereby distending the Vessels, destroys their contracting Force, which many times kills the Tree, or at least weakens it so much, as not to be recovered again for some Years; as I have several times observed.

But being willing to try the Experiment, in the Month of *October* 1723, I made choice of two Standard Almond-Trees, of equal Strength and Age; these I took up as carefully as possible, and having prepar'd their Roots as before directed, I prun'd their Heads in the following manner, *viz.* From one of them I only cut off the small Branches, and such as were bruised or broken, but preserv'd all the strong ones entire: The other I shortened all the strong Branches, and prun'd off the weak and broken Shoots, as is the common Practice. These two Trees I planted in the same Soil, and to the same Situation, gave them both equal Attendance, and manag'd them both as nearly alike as possible; yet, in the Spring, when these Trees began to shoot, that, whose Branches, were entirely preserv'd, came out early, continued to shoot stronger, and is at present much larger, and in better Health than the other. And since this, I have made several other Experiments of the like Nature, which have constantly suc-

ceeded in the same Manner; from whence it is reasonable to conclude, that the shortening of the Branches is a great Injury to all new-planted Trees.

Having thus prepared the Trees for *Planting*, we must next proceed to the Placing them into the Ground; but before this, I would advise, if the Trees have been long out of the Ground, so that their Fibres are dry'd, to place their Roots in Water eight or ten Hours, before they are *planted*, observing to place them in such a Manner, that their Heads may remain erect, and their Roots only immers'd therein, which will swell the dry'd Vessels of the Roots, and prepare them to imbibe Nourishment from the Earth. In fixing of them, great Regard should be had to the Nature of the Soil, which, if cold and moist, the Trees should be *planted* very shallow; as also, if it be a hard Rock or Gravel, it will be much the better Way to raise a Hill of Earth where each Tree is to be *planted*, than to dig into the Rock or Gravel, and fill it up with Earth (as is too often practis'd) whereby the Trees are *planted*, as it were, in a Tub, there being but little Room for their Roots to extend; so that after two or three Years Growth, when their Roots have extended to the Sides of the Hole, they are stopp'd by the Rock or Gravel, can get no farther, and the Trees will decline, and, in a few Years, die; besides, these Holes do detain the Moisture, so that the Fibres of the *Plants* are often rotted thereby. But when they are raised above the Surface of the Ground, their Roots will extend, and find Nourishment, tho' the Earth upon the Rock or Gravel be not three Inches thick, as may

may be frequently observed, where Trees are thus placed.

The next thing to be observed, is, to place the Tree in the Hole in such Manner, that the Roots may be about the same Depth in the Ground, as they were growing before they were taken up: Then break the Earth fine with a Spade, and scatter it into the Hole, so that it may fall in between every Root, that there may be no Hollowness in the Earth (but you should by no Means sift or screen the Mould, for Reasons given in the Article of *Firrs*) then having fill'd in the Earth, you should gently tread it close with your Feet; but do not make it too hard, which is a very great Fault, especially if the Ground be strong or wet.

Having thus *planted* the Trees, you should provide a Parcel of Stakes, which should be drove down by the Sides of the Trees, and fastened thereto, to support them from being blown down, or displaced by the Wind; and then lay some Mulch upon the Surface of the Ground, about their Roots, to prevent the Earth from drying.

This is to be understood of Standard Trees which cast their Leaves; and as to such as are *planted* against Walls, there is no other Difference in their Management, but only to preserve their Heads entire, and to place their Roots about five or six Inches from the Wall inclining their Heads thereto; which should be fastened to the Wall, to prevent their being displaced by the Wind; and in the Spring following, just before they shoot, their Heads should be cut down to five or six Buds, as is fully directed under the seve-

ral Articles of the different Kinds of Fruit.

As to the Watering of all new *planted* Trees, I should advise it to be done with great Moderation; nothing being more injurious to them than over-watering of 'em; Examples enough of this Kind may have been seen in *St. James's Park*, a few Years past, where there have been many Trees *planted* to make the Rows complete, where the old Trees were decay'd; and notwithstanding the great Care in bringing in a large Quantity of fresh Earth, where each Tree was *planted*, yet very few of them have taken, and those few which are yet alive, have made but poor Progress, nor will they ever be thriving Trees; which is wholly owing to the Abundance of Water given to them, whereby the Fibres are rotted off as soon as they are produced. And how can any Person imagine, that a Tree should thrive, when the Ground in which it is *planted*, is continually floated with Water? For, by an Experiment made by the Reverend Mr. *Hales*, in placing the Roots of a Dwarf Pear-Tree in Water, the Quantity of Moisture imbibed decreas'd very much daily, because the Sap-Vessels of the Roots, like those of the cut-off Boughs in the same Experiment, were so saturated and clogged with Moisture, by standing in Water, that more of it could not be drawn up. And this Experiment was tried upon a Tree which was full of Leaves, and thereby more capable to discharge a large Quantity of Moisture, than such Trees as are entirely destitute of Leaves; so that it is impossible such Trees can thrive, where the Moisture is too great about their Roots.

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The Seasons for *Planting* are various, according to the different Sorts of Trees or the Soil in which they are *planted*: For such Trees whose Leaves fall off in Winter, the best time is the Beginning of *October*, provided the Soil be dry; but for a wet Soil, it is better to defer it until the latter End of *February*, or the Beginning of *March*; and for Ever-greens, the Beginning of *April* is, by far, the best Season, though they may be safely remov'd at *Midsummer*, provided they are not to be carried very far; but you should always make Choice of a cloudy, moist Season, if possible, when they will take fresh Root in a few Days. And, on the contrary, when these Trees are removed in Winter, during which time they are almost in a State of Rest, they do not take Root until the Spring advances, and sets the Sap in Motion, so that many times they die, especially if the Winter proves severe.

As to the Preparing the Soil for *Planting*, that must also be done to suit the different Sorts of Trees, some requiring a light Soil, others a strong one, &c. But this is fully set down in the several Articles of Trees, under their proper Heads, to which the Reader is desired to turn; though for Fruit-Trees in general a fresh Soil from a Pasture-Ground, which is neither too light and dry, nor over strong and moist, but rather a gentle, soft, loamy Earth, is to be preferr'd. And if it be for Wall Trees, it will be the better if the Borders are fill'd with this Earth six Feet wide, but it need not be above eighteen Inches or two Feet deep at most; for when the Borders are made too deep, the Roots of these Trees are enticed downward, which is of

bad Consequence to Fruit-Trees, as hath been else-where observed. The same also must be observed for Standard Trees (where fresh Earth is brought to the Places in which they are *planted*) not to make the Holes too deep, but rather let them have the same Quantity of Earth in Width, which is much to be preferr'd.

There are several Persons who direct the Placing of the same Side of the Tree to the South, which, before removing, had that Position, as a material Circumstance to be strictly regarded; but from several Trials which I have made, I could not observe the least Difference in the Growth of those Trees which were so placed, and others which were reversed; so that I conclude it is not of any Consequence to observe this Method.

The Distance which Trees should be *planted* at, must also be proportioned to their several Kinds, and the several Purposes for which they are intended; all which is explain'd under their several Heads; but Fruit-Trees, *planted* either against Walls, or for Espaliers, should be allowed the following Distances. For most vigorous-shooting *Pear-Trees*, twenty four Feet; for *Apricocks*, sixteen Feet; *Apples*, sixteen Feet; *Peaches*, *Nectarines*, *Cherries*, and *Plumbs*, fourteen or sixteen Feet, according to the Goodness of the Soil, or the Height of the Wall. But as these Things are mention'd in their several Articles, it will be needless to repeat any more in this Place.

PLATANUS; The Plane-Tree.

The *Characters* are;

It hath an amentaceous Flower, consisting of several slender Stamina, which are collected into spherical little Balls, and are barren; but the Embryo's

Embryo's of the Fruit, which are produced on separate Parts of the same Tree, are turgid, and do afterwards become large spherical Balls, containing many oblong Seeds, intermix'd with Down.

The Species are ;

1. PLATANUS; *Orientalis, vernus.* Park. Theat. The true Oriental Plane-Tree.

2. PLATANUS; *Occidentalis, aut Virginienfis.* Park. Theat. The Western or Virginian Plane-Tree.

3. PLATANUS; *Orientalis, Aceris folio.* T. Cor. The Maple-leav'd Plane-Tree.

4. AN PLATANUS; *Americanus, foliis oblongis ex adverso nascentibus.* The Button-Tree; *vulgô.*

The first of these Trees (though the first known Sort in *Europe*) is less common than the second; which has been introduced since the *English* settled in *Virginia*; which may be, in a great measure, owing to the latter Sort being much easier to propagate than the former; for every Cutting of this, if planted in a moist Soil, just before the Tree begins to shoot, will take Root, and in a few Years make very large Trees; whereas the first is only propagated from Seeds or by Layers.

The third Sort, although by some suppos'd to be a distinct Species from either of the former, yet is no more but a seminal Variety of the first; for I have had many Plants which came up from the Seeds of the first Sort, which ripen'd in the *Physick-Garden*, which do most of them degenerate to this third Sort, which in the manner of its Leaves, seems to be very different from either, and might reasonably be suppos'd a distinct Sort, by those who have not traced its Original.

The fourth Sort here mention'd was sent from *Carolina*, by the Name of *Button-Tree*, and by the Account, sent with it, seems to be a Sort of *Plane-Trees*, though the Manner of this Tree's growing is very different from any of the other Sorts; but as it hath not produced either Flowers or Fruit in *England*, so I cannot determine whether it be a true *Plane-Tree* or not.

These Trees delight to grow on a moist, rich Soil, on which they will arrive to a prodigious Size in a few Years, and during the Summer Season do afford a glorious Shade; their Leaves being of a prodigious Size, especially on a good Soil, so that there is scarcely any Tree at present in *England*, which does afford so good a Shade. But the Backwardness of their coming out in Spring, together with their Leaves fading early in *Autumn*, has occasioned their not being so generally esteem'd, as otherwise they would be.

The first Sort was brought out of the *Levant* to *Rome*, where it was cultivated with much Cost and Industry: The greatest Orators and Statesmen among the *Romans*, took great Pleasure in their *Villa's* which were surrounded with *Platanus*; and their Fondness to this Tree became so great, that we frequently read of their *irrigating* them with *Wine* instead of *Water*. *Pliny* affirms, that there is no Tree whatsoever which so well defends us from the Heat of the Sun in Summer, nor that admits it more kindly in Winter, for the Branches being produced at a proportionable Distance, to the Largeness of their Leaves (which is what holds through all the different Sorts of Trees yet known) so that when the Leaves

are

are fallen in Winter, the Branches growing at a great Distance, do easily admit the Rays of the Sun.

This Tree was afterwards brought to *France*, where it was cultivated only by Persons of the first Rank; and so much was the Shade of it priz'd, as that if any of the Natives did but put his Head under it, they exacted a Tribute from them.

It is generally suppos'd, that the Introduction of this Tree into *England*, is owing to the great Lord Chancellor *Bacon*, who planted a noble Parcel of them at *Verulam*, which were there, very flourishing, a few Years since. But notwithstanding its having been so long in *England*, yet there are but few very large Trees to be seen of it at present; which may, perhaps, be owing to the great Esteem the Persons of the last Age had for the *Lime*, which being much easier to propagate, and of quicker Growth, during the three or four first Years, than the *Plane-Tree*, thereby it became the most common Tree for Planting of Avenues and shady Walks near Habitations in *England*. But since the Defects of that Tree have been more generally discovered, the *Elm* has had the Preference, and is now the most commonly planted for such Purposes.

However, notwithstanding what has been said of the *Plane-Tree*, of its Backwardness in coming out in the *Spring*, and the sudden Decay of its Leaves in Autumn, yet, for the goodly Appearance, and great Magnitude to which it will grow, it deserves a Place in large Plantations, or shady Recesses near Habitations, especially if the Plantation be design'd on a moist Soil, or near Rivulets of Water; in which Pla-

ces this Tree will arrive to a prodigious Magnitude.

We read of one of these Trees which was growing at a *Villa* of the Emperor *Caligula*, whose Trunk was so large, as, when hollow'd, to make a Room, therein capacious enough to entertain ten or twelve Persons at a Repast, and for their Servitors to wait upon them. And there is mention made of one of these Trees, which was growing in the *Eastern* Country, which was of so great a Magnitude, that *Xerxes* made his Army (which consisted of Seventeen hundred thousand Men) halt, for some Days, to admire the Beauty and Procerity of this Tree; and became so fond of it, as to take his own, his Concubines, and all the great Persons Jewels to cover it; and was so much enamour'd with it, that for some Days, neither the Concern of his Grand Expedition, nor Interest, nor Honour, nor the necessary Motion of his prodigious Army could dissuade him from it: He stil'd it, His Mistress, His Minion, His Goddess; and when he was obliged to part with it, he caused a Figure of it to be stamp'd on a Gold Medal, which he continually wore about him.

And such was the Esteem which the People of *Asia* had for this Tree, that where-ever they erected any sumptuous Buildings, the Portico's, which open'd to the Air, terminated in Groves of these Trees.

The *Eastern Plane-Tree* is propagated either from Seeds or by Layers, the latter of which is generally practis'd in *England*; though the Plants thus rais'd do seldom make so large, strait Trees, as those which are produc'd from Seeds; but

but it has been generally thought, that the Seeds of this Tree were not productive, because they have not been sown at a proper Season, nor managed in a right Manner; for I have had thousands of the young Plants spring up from the Seeds of a large Tree, which scatter'd upon the Ground in a moist Place: And I since find, that if these Seeds are sown soon after they are ripe, in a moist shady Situation, they will rise extremely well; and the Plants thus obtain'd, will make a considerable Progress after the second Year, being much hardier, and less liable to lose their Tops in Winter, than those which are propagated by Layers. And since the Seeds of this Tree ripen well in *England*, they may be propagated in as great Plenty as any other Forest Tree.

The *Virginian Plane-Tree* will grow extremely well from Cuttings, if they are planted the Beginning of *March* upon a moist Soil; and if they are water'd in dry Weather, will make a prodigious Progress. So that in a few Years from the Planting, they will afford noble Trees for planting of Avenues, and other shady Walks; and their Trunks are perfectly strait, growing nearly of the same Size to a considerable Height, there being the least Difference in the Girth of this Tree, for several Yards upwards, of any other Sort of Tree whatsoever. The Honourable *Paul Dudley, Esq;* in a Letter to the *Royal Society*, mentions one of these Trees, which he observed in *New-England*, whose Girth was nine Yards, and held its Bigness a great Way up; which Tree, when cut down, made twenty-two Cord of Wood. He also says, in the same Letter, That he has propagated

many of these Trees by cutting off Sticks of five or six Feet long, and setting them a Foot deep into the Ground in the Spring of the Year, when the Season was wet; and that they always thrive best in a moist Soil.

The Leaves of this Sort are larger, and less divided than those of the *Oriental Plane-Tree*; and the Tree grows much faster, and is hardier, and being thus easily propagated, is now the most common in *England*.

The *Maple-leav'd Plane-Tree* hath its Leaves less divided than the first, but more than the second Sort, so that it is a middle Kind, between both; tho', as I before said, it comes originally from the *Eastern* Sort.

This is propagated very easily by Layers, every Twig of which will take Root, if they are but cover'd with Earth; and when transplanted out in a moist Soil, will grow equally fast with the *Virginian* Kind. But whether this will take from Cuttings or not, I cannot say, having never made Trial of it; though from the Readiness of the Branches taking Root, there is little Reason to doubt of it. The best time to transplant these Trees is in *March*; for if they are removed in Winter, and the Season should prove very severe, the tender Shoots are often kill'd by the Frost.

PLUMB-TREE; *vide* *Prunus*.

PLUMBAGO; Lead-wort.

The Characters are;

The Flower consists of one Leaf, which is shap'd like a Funnel, and cut into several Segments at the Top; out of whose fistulous Flower-cup rises the Pointal, which afterwards becomes one oblong Seed, for the most part sharp-pointed, which ripens in the Flower-cup.

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The Species are;

1. PLUMBAGO; *quorundam. Clus. Hist.* Lead-wort, or Tooth-wort.

2. PLUMBAGO; *Americana, Beta folio ampliori. Plum.* American Lead-wort, with a broad Beet-leaf.

The first of these Sorts grows about Naples, in Sicily, and the Southern Parts of France, but is hardy enough to endure the Cold of our Climate in the open Ground, provided it be planted in a warm dry Soil. This is propagated by parting of the Roots in the Spring before they shoot: In doing of which, you should be very careful to preserve a Head to each Slip, otherwise they will not grow. They should be planted in a warm Situation, and a dry Soil, about two Feet asunder, and water'd until they take Root; after which they will require no farther Care, but to clear them from Weeds, and support their Branches from being broken by the Wind. They commonly rise about three Feet high, but, unless the Autumn be very favourable, they seldom flower in this Country. The Root of this Plant is sometimes us'd in Medicine.

The second is preserv'd by such as are curious in collecting Exotick Plants: This may be propagated in the same manner as the former, as also from Seeds, which should be sown upon a Hot-bed in the Spring; and when the Plants come up, they may be treated in the manner directed for *Amaranth's*; to which the Reader is desir'd to turn, to avoid Repetition. These Plants must be plac'd in the Stove in Winter, where they may have a moderate Degree of Warmth, and should frequently be refresh'd with Water. The second Year they will produce Flowers in the Autumn, and if the Season be warm, the

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Seeds will ripen. This Plant grows plentifully in *Jamaica* and the *Caribbee* Islands; and from the Name given it by Dr. *Boerhaave*, it doth also grow in *Ceylon*.

POINCIANA; Barbados Flower-Fence, or Spanish Carnations.

The Characters are;

The Flower consists of several Leaves, which are plac'd in a circular Order; in the Center of which arises a Number of crooked Stamina; the Pointal which arises from a quinquefid Flower-cup, becomes a long, broad, flat Pod, opening into two Parts, and fill'd with broad, flat, roundish Seeds, each of which is lodg'd in a separate Cell, which are divided by a thin Partition.

We have but two Species of this Plant; which are,

1. POINCIANA; *flore pulcherrimo. Tourn.* Barbados Flower-Fence, with a fair Flower.

2. POINCIANA; *flore luteo. Houst.* Flower-Fence with a yellow Flower.

The first Sort is very common in the *Caribbee* Islands, where it is planted for a Fence to divide Fields, and is greatly esteem'd for the Beauty of its Flowers, which are produc'd on long Spikes in vast Quantities. The Leaves of this Plant are also us'd instead of *Sena*, to purge withal.

This was carry'd from *Cape Verd* Islands to *Barbados*, as is related by *Ligon*, and hath since been dispersed through the other Islands. It grows in those Countries to be ten or twelve Feet high, and the Stem is often as large as the Small of a Man's Leg, and the Wood is very hard; from whence it hath obtain'd the Name of *Ebony* in some Places. The second Sort is a Variety of the first, differing only in the Colour of the Flowers, which in this are yellow, but the other are of a bright red Colour.

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The Seeds of this Plant are annually brought over in Plenty from the *West-Indies*, which, if sown upon a Hot-bed, will rise very easily: and when the Plants are come up, they should be transplanted into small Pots, and plung'd into a Hot-bed of Tanners-Bark, observing to shade them until they have taken Root; after which you must give them Air in Proportion to the Warmth of the Season, and they must be frequently refresh'd with Water. When the Plants have fill'd the Pots with their Roots, they should be taken out, and plac'd into larger ones, that they may have Room to grow: If Care be taken to water and shift them as often as is necessary, they will grow to be three Feet high the first Season. At *Michaelmas* the Pots should be plung'd into a fresh Hot-bed of Tanners-Bark, in the Stove, which should be kept to the *Anana's* Heat, mark'd on Mr. *Fowler's Thermometers*, and frequently refresh'd with Water, but you must never give them large Quantities, which is very injurious to these Plants at that Season. The Earth which these Plants should be planted in, must be fresh, light, and sandy (but not over rich;) in which they will stand the Winter better than if plac'd in a stronger Soil.

With this Management I have rais'd several Plants to be five Feet high; some of which I have preserv'd two or three Years, and have had the Buds of the Flowers appear, but have not as yet been able to bring them to flower; tho' I am in hopes it may be effected, since the Improvements which are made every Year in the keeping of tender Plants, are very considerable.

POKE VIRGINIAN; *vide* Phytolacca.

POLEMONIUM; Greek Valerian, or Jacob's Ladder.

The Characters are;

The Flower consists of one Leaf, which is divided deeply into five Parts, and is Wheel-shap'd; the Pointal which rises from the Flower-cup, afterwards becomes a roundish Fruit, divided into three Cells, which are fill'd with oblong Seeds; to which should be added, The Leaves are pinnated.

The Species are;

1. POLEMONIUM; *vulgare, carneum*. Tourn. Green Valerian, with a blue Flower.

2. POLEMONIUM; *vulgare, album*. Tourn. Greek Valerian, with a white Flower.

3. POLEMONIUM; *vulgare, flore variegato*. Tourn. Greek Valerian, with a strip'd Flower.

4. POLEMONIUM; *vulgare, foliis eleganter variegatis*. Boerb. Ind. Greek Valerian, with beautiful strip'd Leaves.

The two first Species are very common in many English Gardens, where they are cultivated for the Beauty of their Flowers: They have also been found wild in *Carleton-Beek*, and about *Malham Cove* near *Craven*. The Sort with variegated Flowers, as also that with strip'd Leaves, are Varieties which have been obtain'd from the former.

These Plants are easily propagated, by sowing their Seeds in the Spring upon a Bed of light Earth; and when they are come up pretty strong, they should be prick'd out into another Bed of the same light Earth, about three Inches asunder, observing to shade and water them until they have taken Root, after which they will require no farther Care but to keep them clear from Weeds, until *Michaelmas*; at which time they must be transplanted into the

the Borders of the Flower-Garden, where, being intermix'd with different sorts of Flowers, they will make a beautiful Appearance. These produce their Flowers in May and June; and their Seeds ripen in August.

The variegated Kinds are preserv'd by parting of their Roots, because the Plants rais'd from Seeds would be subject to degenerate, and become plain. The best time to part them is about Michaelmas, that they may take good Root before the cold Weather prevents them. These should have a fresh light Soil, but if it be too rich, their Roots will rot in Winter, and their Stripes will go off.

POLIUM: Poley-Mountain.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Stamina supplies the Place of the Crest; the Beard (or Under-lip) is divided into five Segments, as the Germander; out of the Flower-cup rises the Pointal, attended, as it were, by four Embryo's, which afterwards become so many Seeds, shut up in the Flower-cup: To these Marks must be added, That the Flowers are collected into a Head upon the Tops of the Stalks and Branches.

The Species are;

1. **POLIUM; Montanum luteum.**
C. B. P. Yellow Mountain Poley.

2. **POLIUM; Montanum, album.**
C. B. P. White Poley Mountain.

3. **POLIUM; Lavendula folio.**
C. B. P. Poley Mountain, with a Lavender-leaf.

4. **POLIUM; Lavendula folio, angustiori.** C. B. P. Poley Mountain, with a narrower Lavender-leaf.

5. **POLIUM; Pyreniacum, supinum, bederæ terrestris folio.** Tourn. Creeping Pyrenian Poley Mountain, with a Ground-Ivy-Leaf.

6. **POLIUM; maritimum, erectum, Monspeliacum.** C. B. P. Upright Poley Mountain of Montpelier.

7. **POLIUM; Montanum, luteum, serratis, angustioribus, incanis foliis.** Barrel Yellow Poley Mountain, with narrow hoary serrated Leaves.

There are several other Species of this Plant, which are preserv'd in some curious Botanick Gardens for Variety; but those here mention'd, are what I have observ'd in the English Gardens.

These Plants are all propagated by planting their Cuttings in a Bed of light fresh Earth, during any of the Summer Months, which should be water'd and shaded until they have taken Root; after which they will require no other Culture than to keep them clear from Weeds until Michaelmas; when they should be transplanted into a warm Situation, and must have a very dry Soil, otherwise they are subject to decay in Winter, for they are Natives of warm Countries: but if they are plac'd in a dry Rubbish, under the Shelter of a Wall or Pale, they will endure the Cold of our ordinary Winters very well. These Plants produce their Flowers in June and July, but do rarely perfect their Seeds in this Country. Their Flowers have very little Beauty in them; but for their hoary Leaves, and odd Appearance, a few Plants of them may be admitted for Variety. The second Sort is us'd in Medicine.

POLYANTHOS; vide Primula Veris.

POLYGALA; Milk-wort.

The Characters are;

It hath a Flower consisting of one Leaf, of an anomalous Figure, perforated behind, but divided into two Lips before; the uppermost Lip is divided into two Parts, but the under one is curiously fringed; out of the lower

lower Part of the Flower rises the Pointal, which afterwards becomes a broad Fruit, divided into two Cells, which contain oblong Seeds, the Fruit is generally enclos'd in the Flower-cup, which is compos'd of five Leaves, viz. three small ones, and two larger, which afterwards embrace the Fruit like Wings.

The Species are ;

1. POLYGALA ; *major, caerulea*, Tabern. Greater blue Milkwort.
2. POLYGALA ; *major, alba*. Tabern. Greater white Milkwort.
3. POLYGALA ; *vulgaris*. C. B. P. Common Milkwort, with a blue Flower.
4. POLYGALA ; *alba* Tabern. White common Milkwort.
5. POLYGALA ; *Africana frutescens, folio buxi, flore maximo*. Oldenl. Shrubby African Milkwort, with a Box-leaf, and a very large Flower.

The four first Species are found wild in moist Meadows in divers Parts of England, and are never preserv'd in Gardens, except for the Sake of Variety : However, I thought proper to insert them in this Place, to introduce the fifth Sort, which is a beautiful Plant, and is worthy to be preserv'd in all curious Collections of rare Plants.

This is propagated by Seeds, which should be sown upon a moderate Hot-bed in the Spring; and when the Plants are come up, they should be prick'd into small Pots, fill'd with light rich Earth, and plung'd into another Hot-bed, where they should be shaded until they have taken Root, and often refresh'd with Water; after which they must have Air given them in Proportion to the Warmth of the Season, and in July they may be remov'd into the open Air, placing them in a warm Situation, where they may be shelter'd from strong Winds, and in dry

Weather they must be often refresh'd with Water: In this Place they may remain until October, when the Nights begin to be frosty; then you should remove them into the Green-House, placing them where they may have the Advantage of the free Air, when the Weather is favourable enough to admit of the Glasses being open'd, for they only require to be protected from Frost: During the Winter Season, they should often be refresh'd with Water, but it should not be given to them in large Quantities, which will injure their Roots: In Summer, they may be expos'd with *Myrtles*, *Geraniums*, &c. in a Situation where they are defended from strong Winds; and as their Roots increase, so the Size of their Pots should be enlarg'd; but you must be very cautious not to over-pot them, which is injurious to all sorts of *Exotick* Plants.

The Earth in which these Plants are set, should be rich, fresh, and light, in which they will thrive exceedingly, and continue in Flower most part of the Year, which renders it very valuable, and if the Season proves favourable, the Seeds will ripen very well; but you must be careful to gather them when ripe, otherwise they will drop off and be lost.

POLYGONATUM ; Solomon's Seal.

The Characters are ;

The Flower consists of one Leaf, is tuberose, and expands at the Top in Shape of a Bell, and is divided into several Segments; the Ovary, which is situated in the Center of the Flower, becomes a soft globular Fruit, containing roundish Seeds.

The Species are ;

1. POLYGONATUM ; *latifolium, vulgare*. C. B. P. Common Broad-leav'd Solomon's-Seal.

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2. POLYGONATUM; *latifolium, vulgare, caulibus rubentibus*. H. L. Common broad-leav'd Solomon's-Seal, with red Stalks.

3. POLYGONATUM; *latifolium, minus, flore majore*. C. B. P. Lesser broad-leav'd Solomon's-Seal, with a larger Flower.

4. POLYGONATUM; *latifolium, flore duplici odore*. H. R. Par. Broad-leav'd Solomon's-Seal, with a double sweet-smelling Flower.

There are several other Species of this Plant, which are preserv'd in Botanick Gardens for Variety; but those here mention'd are the principal Sorts cultivated in England.

These Plants are easily propagated by parting of their Roots in the Spring before they begin to shoot, serving always to preserve a Bud in each Off-set: They should be set in a fresh light Earth, where they will thrive exceedingly; but if too over rich, it will destroy their Roots. The first Sort is the most common in England, and is what the College has directed for Medical Use.

POLYPODIUM; Polypody.

The Characters are;

It is a Capillary Plant, with oblong Leaves, having a middle Rib, which joins them to the Stalks run through each Division.

The Species are;

POLYPODIUM; *vulgare*. C. B. P. Common Polypody.

POLYPODIUM; *majus serrato* Barr. Icon. Greater Polypody, with serrated Leaf.

POLYPODIUM; *Cambro-Britannicum, pinnulis ad margines laciniatis*. Raii. Syn. Welsh Polypody, with lacinated Leaves.

There are several other Species of this Plant, which are preserv'd in various Botanick Gardens for Variety; but as they are rarely cul-

tivated in other Gardens, so it is not worth while to enumerate them in this Place.

The first Sort is that which is us'd in Medicine, and is found growing upon old Walls and shady Banks in divers Parts of England. The second seems to be only a Variety of the first, which differs therefrom in being larger, and having serrated Leaves. The third Sort was brought from Wales, where it grows in great Plenty, and is the most beautiful of all the Sorts. These Plants may be propagated by parting of their Roots in the Spring before they shoot, and should be planted in a very poor moist Soil under the Shade of a Wall, for if they are expos'd to the Sun, they will not thrive: They chiefly delight to grow out of the Joints of Walls, and old Buildings, but are commonly found expos'd to the North.

POMEGRANATE; *vide Punica*.

POMUM ADAMI; *vide Aurantium*.

POPULAGO; Marsh Mary-gold.

The Characters are;

The Flowers consists of several Leaves, which are plac'd circularly, and expand in Form of a Rose, in the Middle of which rises the Pointal, which afterwards becomes a membranaceous Fruit, in which there are several Cells, (which are for the most part bent downwards) collected into little Heads, and are full of oblong Seeds.

The Species are;

1. POPULAGO; *flore majore*. Tourn. Marsh Marygold, with a larger Flower.

2. POPULAGO; *flore minore*. Tourn. Marsh-Marygold, with a smaller Flower.

3. POPULAGO; *flore pleno*. Tourn. Marsh-Marygold, with a double Flower.

The two first Sorts are very common on boggy and watry Places in divers Parts of England, and are seldom cultivated in Gardens : But the third Sort, which is a Variety from the second, is preserv'd in Gardens for its fine double Flowers.

This Plant is propagated by parting of the Roots in Autumn, and must be planted on a moist Soil, otherwise the Flowers will not be near so fair, nor will the Plants thrive. These are very proper to place in very wet Parts of the Garden, where few other Plants will thrive, and will afford an agreeable Variety during their Season of Flowering, which is from the Middle of April until the latter End of May; so that they are worthy of a Place in every curious Flower-Garden.

POPULUS ; the Poplar-Tree.

The Characters are ;

The Leaves are broad, and for the most part angular ; the Male Trees produce amantaceous Flowers, which have many little Leaves and Apices, but are barren : The Female Trees produce membranaceous Pods, which open into two Parts, containing many Seeds, which have a large Quantity of Down adhering to them, and are collected into Spikes.

The Species are ;

1. POPULUS ; *alba, minoribus foliis*. C. B. P. White Poplar, with smaller Leaves.
2. POPULUS ; *alba, majoribus foliis*. C. B. P. White Poplar, with large Leaves, commonly call'd, The Abele-Tree.
3. POPULUS ; *tremula*. C. B. P. The Trembling Poplar, or Alpen-Tree.
4. POPULUS ; *nigra*. C. B. P. The Black Poplar-Tree, by some falsly call'd, The Cotton-Tree.

5. POPULUS ; *alba, folio minore, variegato*. The white Poplar, with strip'd Leaves.

These Trees may be propagated either from Layers or Cuttings, which will readily take Root, as also from Suckers, which the white Poplars send up from their Roots in great Plenty. The best Time for trasplanting these Suckers, is in October, when their Leaves begin to decay. These may be plac'd in a Nursery for two or three Years, to get Strength, before they are planted out where they are design'd to remain : But if you intend to propagate them from Cuttings, it is better to defer the doing of that until February ; at which time you may plant Truncheons of four or five Feet long, thrusting them about a Foot into the Ground : These will readily take Root, and if the Soil be moist in which they are planted, will arrive to a considerable Bulk in a few Years.

The black Poplar is not so apt to take Root from large Truncheons, therefore 'tis the better Method, to plant Cuttings about a Foot and a half in Length, thrusting them a Foot deep into the Ground : These will take Root very freely, and may be afterwards transplanted where they are to remain. This Sort will grow upon almost any Soil, but will thrive best in moist Places.

I have planted Cuttings of this Tree, which in four Years, have been bigger in the Trunk than a Man's Thigh, and near twenty Feet in Height, and this upon a very indifferent Soil ; but in a moist Soil, it is common for these Trees to shoot twelve or fourteen Feet in a Season : So that where a Person hath a mind to make a Shelter in a few Years, there is scarce any Tree

so proper for that Purpose as this: But they should not be planted too near the Pleasure-Garden, because the Down which falls from these Trees will make a prodigious Litter.

The White Sorts, as also the *Ash*-Tree, do also cause a great Litter in the Spring, when their Down falls off; and their Roots being very apt to produce a large Quantity of suckers, renders them unfit to be planted near an House or Garden; but when they are interspers'd with other Trees in large Plantations, they afford an agreeable Variety; their Leaves being very white on their Undersides, which when blown with the Wind, are turn'd to Sight.

A considerable Advantage may be obtain'd by planting these Trees on moist boggy Soils, where fewer Trees will thrive: Many such places there are in *England*, which not, at present, bring in much money to their Owners; whereas they were planted with these trees, they would, in a very few years, over-purchase the Ground, at all Expence: But there are many Persons in *England*, who do nothing, except Corn, worth cultivating: or if they plant Timber it must be *Oak*, *Ash*, or *Elm*; if their Land be not proper for either of these, it is deem'd not worth; whereas if the Nature of the Soils was examin'd, and proper sorts of Plants adapted to them, might be very great Advantage made of several large Parcels of Land, which at this time lie neglected.

The Wood of these Trees, especially of the *Ash*, is very good to cover Floors, where it will last many Years; and for its exceeding whiteness, is, by many Persons preferred to *Oak*; it is also very proper

for Wainscoting of Rooms, being less subject to swell or shrink than most other Sorts of Wood: But for Turnery Ware, there is no Wood equal to this for its exceeding Whiteness, so that *Trays*, *Bowls*, and many other Utensils are made of it; and the Bellows-makers prefer it for their Use; as do also the Shoemakers, not only for Heels, but also for the Soles of Shoes: It is also very good to make light Carts; and the Poles are very proper to support *Vines*, *Hops*, &c. and the Lopping will afford good Fuel, which in many Countries is much wanted.

PORRUM; Leek.

The Characters are;

The Flower consists of six Petals, and is shap'd, as it were, like a Bell; in the Center arises the Pointal, which afterwards becomes a roundish Fruit, divided into three Cells, which contain roundish Seeds: To these Notes must be added, The Stamina are generally broad, and flat, ending in three Capillaments; of which the middle one is furnish'd with a Chive; the Flowers are also gather'd into almost globular Bunches; the Roots are long, cylindrical, and coated; the Leaves ending in plain Leaves.

The Species are;

1. PORRUM; *commune capitatum*.
C. B. P. The common Leek.

2. PORRUM; *sectivum, latifolium*.
C. B. P. Broad-leav'd Leek, commonly call'd, The London Leek.

There are some other Species of this Plant, which grow wild in the South of *France* and *Spain*, but as they are seldom cultivated in Gardens, so I shall forbear to mention them here. The two Sorts here mention'd, are by many Persons affirm'd to be the same, both of them rising from the same Seed; but this is what the Gardeners near *London* will not believe, for they

never sow the Seeds of the latter, if they can procure those of the first Sort, there being a great Difference in the Size of the Head, or principal Part of the Leek; but whether by long cultivating they may not alter, I cannot positively affirm, having never sown the Seeds of the latter Sort above one Year.

These Plants are cultivated by sowing their Seeds in the Spring, in the same manner as was directed for *Onions*, with which these are commonly sown, the two Sorts of Seeds being mix'd according to the Proportion which is desir'd of either Sort; tho' the most common Method is, to mix an equal Quantity of both, for the *Onions* will greatly out-grow the *Leeks* in the Spring; but these being drawn off in *July*, the *Leeks* will have time to grow large afterwards, so that there may be a moderate Crop of both Sorts. The Management of *Leeks* being exactly the same with *Onions*, I shall not repeat it in this Place, but shall only add, that many Persons do sow their *Leeks* very thick in Beds in the Spring; and in *June*, after some of their early Crops are taken off, they dig up the Ground and plant their *Leeks* out thereon, in Rows a Foot apart, and six Inches asunder in the Rows, observing to water them until they have taken Root; after which they will require no farther Culture, but to clear the Ground from Weeds: The *Leeks* thus planted, will grow to a great Size, provided the Ground be good; and this Method is very proper for such Persons who have little Room.

If you would save the Seeds of this Plant, you should make Choice of some of the largest and best you have, which must remain in the Place where they grew, until Fe-

bruary; when they should be transplanted in a Row against a warm Hedge, Pale or Wall, at about eight Inches asunder; and when their Stems advance, they should be supported by a String, to prevent their being broke down, to which they are very liable, especially when in Head, and the closer they are drawn to the Fence, in Autumn, the better the Seeds will ripen; for it sometimes happens, in cold Summers or Autumns, that those which grow in the open Garden, do not perfect their Seeds in this Country, especially if there should be sharp Frosts early in Autumn, which will intirely spoil the Seed.

When it is ripe, (which may be known by the Heads changing brown) you should cut off their Heads with about a Foot or more of the Stalk to each, and tie them in Bundles, three or four Heads in each, and hang them up in a dry Place, where they may remain till *Christmas*, or after, when you may thrash out the Seeds for Use. The Husk of these Seeds is very tough, which renders it very difficult to get out the Seeds, therefore some Persons who have but a small Quantity, do rub it hard against a rough Tile, which will break the Husks, and get the Seeds out better than most other Methods I have known used.

PORTULACA: Purslane.

The Characters are;

The Flower consists of many Leaves, which expand in Form of a Rose; out of whose Flower-cup (which consists of one Leaf) arises the Pointal, which, together with the Flower-cup becomes a Fruit for the most part Oval, full of small Seeds, and furnished with two Shells or Husks at top; of which the outer one, which was the Part of the Flower-cup that was split in

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in two, opens first; and the inner one, which is the Pointal enlarg'd, opens last, doubly and transversely, while the lower Part of the Flower-cup adheres to the Foot-stalk.

The Species are;

1. PORTULACA; *latifolia*, seu *sativa*. C. B. P. Broad-leav'd or Garden Purslane.

2. PORTULACA; *sativa*, *latifolia*, *foliis flavis*. Mor. Hist. Broad-leav'd Garden Purslane, with yellow Leaves.

3. PORTULACA; *angustifolia*, *sive sylvestris*. C. B. P. Narrow-leav'd or Wild Purslane.

4. PORTULACA; *Curassavica*, *folio capparidis*. Par. Bat. Purslane from Curasso, with a Caper-leaf.

The first Sort here mention'd, is what the Gardeners near London do chiefly cultivate; though the second Sort does very often come up mix'd with the first; but whether it is only an accidental Variety arising from the same Seeds, or that the Seeds are promiscuously sav'd, I can't determine: Indeed, there is no other Difference between them, but only the Colour of their Leaves, so that they are both equally good for Use; but the green Sort having a better Appearance, is generally preferr'd in the Markets.

The wild Sort is not a Native of England, but grows plentifully in many warm Countries; where when it has once obtain'd so as to shed its Seeds, 'tis difficult to extirpate again. This is seldom us'd, though 'tis not different from the Garden-kind, except in the Smallness of its Leaves.

The fourth Sort is very common in most of the warm Parts of America, where it grows in great Plenty upon the Shores and Rocks near the Sea. This is preserv'd in some

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curious Gardens for Variety, but is a Plant of no great Beauty.

Purslane is propagated from Seeds, which may be sown upon Beds of light rich Earth, during any of the Summer Months; but if you intend to have it early in the Season, it should be sown upon a Hot-bed, for it is too tender to be sown in the open Air before April, and then it must be in a warm Situation. This Seed is very small, so that a little of it will be sufficient to supply a Family. There is no other Culture which this Plant requires, but to keep it clear from Weeds, and in dry Weather to water it twice or three times a Week. In warm Weather this Plant will be fit for Use in six Weeks after sowing; so that in order to continue a Succession of this Plant, you should sow it at three or four different Seasons, allowing a Fortnight between each Sowing, which will be sufficient to last the whole Season, while it is proper to be eaten; for it being of a very cold Nature, it is unsafe to be eaten, except in the Heat of Summer, in England; for which Reason, it is not to any Purpose to sow it upon a Hot-bed, since it will come early enough for Use in the open Air.

PRIMULA VERIS: Primrose.

The Characters are;

The Flower consists of one Leaf; the lower Part of which is tubulose, but the upper Part expands itself flat in Form of a Salver, and is cut into several Segments; from the Flower-cup (which is fistulous) arises the Pointal; which, when the Flower is decay'd, becomes an oblong Frutt or Husk, lying almost conceal'd in the Flower-cup, and opens at the Top, in which is contain'd many roundish Seeds fasten'd to the Placenta.

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The Species are;

1. PRIMULA VERIS; *vulgaris*. Park. Common Primrose.

2. PRIMULA VERIS; *Constantinopolitana*, *flore albo*. Tourn. Primrose of Constantinople, with a white Flower, commonly call'd, The Paper-white Primrose.

3. PRIMULA VERIS; *Constantinopolitana*, *flore dilute carneo*. Tourn. Primrose of Constantinople, with a pale flesh-colour'd Flower.

4. PRIMULA VERIS; *Constantinopolitana*, *flore dilute purpureo*. Tourn. Primrose of Constantinople, with a pale purple Flower.

5. PRIMULA VERIS; *Constantinopolitana*, *flore albo duplici*. Primrose of Constantinople, with a double white Flower, commonly call'd, The Double Paper-white Primrose.

6. PRIMULA VERIS; *vulgaris*, *flore dilute purpureo*. Common Primrose, with a pale-purple Flower.

7. PRIMULA VERIS; *vulgaris flore pleno*. Common Primrose, with a very double Flower.

8. PRIMULA VERIS; *vulgaris*, *flore pleno*, *dilute rubente*. Common Primrose, with a double pale-red Flower.

9. PRIMULA VERIS; *pallido flore*, *elacior*. Clus. Common Pagils, or Cowslips.

10. PRIMULA VERIS; *umbellata*, *odorata*, *pratensis*. Great Cowslips or Oxslips.

11. PRIMULA VERIS; *geminato flore*. H. Eyst. Double Cowslip, or Hose in Hose.

12. PRIMULA VERIS; *caulifera*, *flore luteo pleno*, *odorato*. J. B. Cowslip or Pagil, with a very double Flower.

13. PRIMULA VERIS; *kortensis*, *umbellata*, *caule & flore folioso*, *coccineo majore*. H. L. Garden Primrose or Polyanthus, with a large red Flower.

14. PRIMULA VERIS; *umbellata*, *odorata*, *hortensis*, *simplicis*, *varietas uberrima pro varietate jucundissima coloris multiplicis*. Boerb. Ind.

There are a great Variety of the Garden Primroses or Polyanthus's, which are annually produc'd from Seeds; the Flowers of which are so beautifully strip'd, and some of them have a great Number of Flowers upon a Stalk, so that they equal the *Auricula's* in the Beauty of their Flowers; and as they require but little Culture, so they have, in many Gardens, obtain'd the Preference to most other Spring Flowers.

The first Sort of Primrose grows wild in Woods and other shady Places in most Parts of England, from whence their Roots may be easily transplanted into the Garden; where, if they are plac'd under Hedges, and in shady Walks, they make a beautiful Appearance early in the Spring, when few other Plants are in Flower.

The best Time to transplant them is at *Michaelmas*, that their Roots may have Strength to produce their Flowers early in the Spring. These delight in a strong rich Soil, but will grow in almost any sort of Earth, provided they have a shady Situation.

The sixth, seventh and eighth Sorts are Varieties of the first, which have been accidentally produc'd from Seeds: These may be propagated by parting of their Roots at *Michaelmas*, and must be treated as the common Sort.

The ninth and tenth Sorts, do also grow wild in the Meadows in divers Parts of England, the Roots of which are often transplanted into Gardens; where, if they are intermix'd with other early flowering

ing Plants, they afford an agreeable Variety.

The eleventh and twelfth Sorts are Varieties which were produc'd from Seeds of the former; but the last is, at present, very rare in *England*. These may be propagated by parting their Roots at *Michaelmas*, and should be planted on a strong Soil, and expos'd to the Morning-Sun.

The several Varieties of *Polyanthus's* are produc'd by sowing of Seeds, which should be sav'd from such Flowers as have good Properties, *i. e.* such as have large upright Stems, producing many Flowers upon a Stalk, the Flowers large, beautifully strip'd, and that open flat: From the Seeds of such Flowers, there is room to hope for a great Variety of good Sorts.

These Seeds should be sown in Boxes fill'd with light rich Earth, in *December*, being very careful not to bury the Seed too deep, for if it be only cover'd with light Earth it will be sufficient: These Boxes should be plac'd where they may receive the Benefit of the Morning-Sun until ten of the Clock, but must by no means be expos'd to the Heat of the Day, especially when the Plants begin to appear, for at that time one whole Day's Sun will intirely destroy them: In the Spring, if the Season should prove dry, you must often refresh them with Water; and as the Heat increases, so you should remove the Boxes more in the Shade, for the Heat is very injurious to them.

In *May* these Plants will be strong enough to plant out; at which time you should prepare some shady Borders, which should be made rich; upon which you must set the Plants about four Inches asunder, observing to water them until they

have taken Root; after which they will require no farther Care but to keep them clear from Weeds, until the latter End of *August* following; when you should prepare some Borders, which are expos'd to the East, with good light rich Earth, into which you must transplant your *Polyanthus's*, placing them six Inches asunder equally in Rows, observing, if the Season proves dry, to water them until they have taken Root. In these Borders your Plants will flower the succeeding Spring; at which time you must observe to mark such of them which are fine, to preserve, and the rest may be transplanted into Wilderesses, and other shady Places in the Garden; where, although they are not very valuable Flowers, they will afford an agreeable Variety.

Those which you intend to preserve, may be removed soon after they have done flowering (provided you do not intend to save Seeds from them) and may be then parted and transplanted into a fresh Border of the like rich Earth, allowing them the same Distance as before; observing also to water them until they have taken Root, after which they will require no farther Care, but only to keep them clean from Weeds; and the following Spring they will produce strong Flowers; and if the Kinds are good, will be little inferior to a Shew of *Auricula's*.

These Roots should be constantly removed and parted every Year, and the Earth of the Border changed, otherwise they will degenerate and lose the greatest Part of their Beauty.

If you intend to save Seeds, which is the Method to obtain a great Variety, you must mark such of them, which, as I said before, have

have good Properties: These should be, if possible, separated from all ordinary Flowers, for if they stand surrounded with plain-colour'd Flowers, they will impregnate each other, whereby the Seeds of the valuable Flowers will not be near so good, as if the Plants had been in a separate Border where no ordinary Flowers grew; therefore the best Way is to take out the Roots of such as you do not esteem, so soon as the Flowers open, and plant them in another Place, that there may be none left in the Border, but such as you would chuse for Seeds.

The Flowers of these should not be gathered, except such as are produced singly upon Pedicles, leaving all such as grow in large Bunches; and if the Season should prove dry, you must now and then refresh them with Water, which will cause their Seeds to be larger and in greater Quantity, than if they were intirely neglected. Towards the latter End of *May* the Seed will be ripe, which may be easily known by the Pods changing brown and opening; so that you should at that Time look over it three times a Week, gathering each time such of it as is ripe, which should be laid upon a Paper to dry, and may then be put up until the Season of sowing.

PRIMROSE-TREE; *vide* Onagra.

PRIVET; *vide* Ligustrum.

PRUNING OF TREES: There is not any Part of Gardening, which is of more general Use than that of *Pruning*; and yet it is very rare to see Fruit-Trees skilfully manag'd; almost every Gardener will pretend to be a Master of this Business, though there are but few who rightly understand it; nor is

it to be learn'd by Rote, but requires a strict Observation of the different manners of Growth of the several Sorts of Fruit Trees; some requiring to be manag'd one way, and others must be treated in a quite different Method, which is only to be known from carefully observing how each Kind is naturally dispos'd to produce its Fruit: For some Sorts do produce their Fruit on the same Year's Wood, as *Vines*; others produce their Fruit, for the most part, upon the former Year's Wood, as *Peaches*, *Nectarines*, &c. and others upon Cursons or Spurs, which are produced upon Wood of three, four, or five Years old, as *Plumbs*, *Pears*, *Cherries*, &c. therefore in order to the right Management of Fruit-Trees, there should always be Provision made to have a sufficient Quantity of bearing Wood, in every Part of the Trees, and at the same Time, there should not be a Superfluity of useless Branches, which would exhaust the Strength of the Trees, and cause them to decay in a few Years.

The Reasons which have been laid down for *Pruning* of Fruit-Trees, are as follow; First, to preserve Trees longer in a vigorous bearing State; the second is, to render the Trees more beautiful to the Eye; and thirdly, to cause the Fruit to be larger and better tasted.

1. It preserves a Tree longer in a healthy bearing State, by *Pruning* off all superfluous Branches, whereby there are no more left upon the Tree than is necessary, or that the Roots can nourish kindly; so that the Root is not exhausted in supplying useless Branches, which must afterwards be cut out, and thereby consequently much of the Sap expended to no Purpose.

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2. By skilful *Pruning* of a Tree, it is rendered much more pleasing to the Eye; but I would not be understood to be an Advocate for a Sort of *Pruning*, which I have seen too much practis'd of late, *viz.* the drawing of a regular Line against the Wall, according to the Shape or Figure they would reduce the Tree to, and cut all the Branches, whether strong or weak, exactly to the chalk'd Line; the Absurdity of which Practice, will soon appear to every one who will be at the Pains of observing the Difference of those Branches shooting the succeeding Spring. All therefore that I mean by rendering a Tree beautiful is, that the Branches are all *prun'd* according to their several Strengths, and are nail'd at equal Distances, in proportion to the different Sizes of their Leaves and Fruit; and that no Part of the Wall (so far as the Trees are advanc'd) be left unfurnished with bearing Wood. A Tree well manag'd, though it does not represent any regular Figure, yet will appear very beautiful to the Sight, when it is thus dress'd and nail'd to the Wall.

3. It is of great Advantage to the Fruit; for the cutting away all useless Branches and shortening all the bearing Shoots, according to the Strength of the Tree, does render the Tree more capable to nourish those which are left remaining, so that the Fruit will be much larger, and better tasted. And this is the Advantage which those Trees against Walls or Espaliers have, to such as are Standards, and are permitted to grow as they are naturally inclined; for it is not their being trained either to a Wall or Espalier, which renders their Fruit so much better

than Standards, but because they have a less Quantity of Branches and Fruit for their Roots to nourish, and so consequently their Fruit will be larger and better tasted.

The Reasons for *Pruning* being thus exhibited, the next Thing is the Method of performing it; but this being fully handled under the several Articles of the different Kinds of Fruit, I shall not repeat it again in this Place, and therefore shall only add some few general Instructions, which are necessary to be understood, in order to the right Management of Fruit-Trees.

There are many Persons who suppose, that if their Fruit-Trees are but kept up to the Wall or Espalier, during the Summer-season, so as not to hang in very great Disorder, and in Winter to get a Gardener to *prune* them, it is sufficient: But this is a very great Mistake; for the greatest Care ought to be employed about them in the Spring, when the Trees are in vigorous Growth; which is the only proper Season, to procure a Quantity of good Wood in the different Parts of the Tree, and to displace all useless Branches, so soon as they are produced, whereby the Vigour of the Tree will be intirely distributed to such Branches only, as are design'd to remain, which will render them strong, and more capable to produce good Fruit; whereas, if all the Branches are permitted to remain, which are produced, some of the more vigorous will attract the greatest Share of the Sap from the Tree, whereby they will be too luxuriant for producing Fruit, and the greatest Part of the other Shoots will be starved, and rendered so weak, as not to be able to produce any thing else but Blossoms and Leaves (as hath been before-mentioned)

mentioned) so that it is impossible for a Person, let him be ever so well skill'd in Fruit-Trees, to reduce them into any tolerable Order by *Winter-pruning* only, if they are wholly neglected in the Spring.

There are others, who do not intirely neglect their Trees during the Summer Season, as those before-mentioned; but yet do little more good to them by what they call *Summer-pruning*; for these Persons neglect their Trees at the proper Season, which is in *May*, when their Shoots are produced, and do only about *Midsummer* go over them, nailing in all their Branches, except such as are produced fore-right from the Wall, which they cut out; and at the same time do often shorten most of the other Branches; all which is intirely wrong Practice; for those Branches which are intended for bearing the succeeding Year, should not be shortened during the Time of their Growth, which will cause them to produce two lateral Shoots from the Eyes below the Place where they were stopp'd, which Shoots will draw much of the Strength from the Buds of the first Shoot, whereby they are often flat, and do not produce their Blossoms; and if those two lateral Shoots are not intirely cut away at the *Winter-pruning*, they will prove injurious to the Tree. And in this Method, suffering those luxuriant Shoots to remain upon the Tree until *Midsummer* before they are displaced, they will exhaust a great Share of the Nourishment from the other Branches (as was before observed) and by shading the Fruit all the Spring Season, when they are cut away, and the other Branches fastened to the Wall, the Fruit by being so suddenly exposed, will re-

ceive a very great Check, which will cause their Skins to grow tough, and thereby render them less delicate. This is to be chiefly understood of Stone-Fruit and *Grapes*; but *Pears* and *Apples* being much hardier, do not suffer so much, though it is a great Disadvantage to those also to be thus managed.

It must also be remark'd, that *Peaches*, *Nectarines*, *Apricocks*, *Cherries* and *Plumbs*, are always in the greatest Vigour, when they are the least main'd by the Knife; for where these Trees have large Amputations, they are very subject to gum and decay; so that it is certainly the most prudent Method, carefully to rub off all useless Buds when they are first produced, and pinch others, where new Shoots are wanted to supply the Vacancies of the Wall; by which Management Trees may be so ordered, as to want but little of the Knife in *Winter-Pruning*, which is the surest Way to preserve these Trees healthful, and is perform'd with less Trouble than the common Method.

The Management of *Pears* and *Apples*, is much the same with these Trees in Summer, but in Winter they must be very differently pruned; for as *Peaches* and *Nectarines* do, for the most part, produce their Fruit upon the former Year's Wood, and therefore must have their Branches shortened according to their Strength, in order to produce new Shoots for the succeeding Year; so *Pears* and *Apples*, on the contrary, producing their Fruit upon *Cursons* or *Spurs*, which come out of the Wood of five, six or seven Years old; should not be shortened, because thereby those Buds which were naturally disposed to form these

these *Cursons* or *Spurs*, would produce Wood Branches, whereby the Trees would be fill'd with Wood, but never produce much Fruit; and as it often happens that the Blossom-Buds are first produced at the Extremity of the last Year's Shoot, so by shortening the Branches, the Blossoms are cut away, which should always be carefully avoided.

There are several Authors who have written on the Subject of *Pruning* in such a prolix Manner, that it is impossible for a Learner to understand their Meaning; these have described the several Sorts of Branches, which are produced on Fruit-Trees; as *Wood-Branches*, *Fruit-Branches*, *Irregular-Branches*, *False-Branches*, and *Luxuriant-Branches*, all which they assert, every Person who pretends to *Pruning*, should distinguish well: Whereas there is nothing more in all this but a parcel of Words to amuse the Reader, without any real Meaning; for all these are comprehended under the Description already given of luxuriant or useless Branches, and such as are term'd useful or Fruit-bearing Branches, and where due Care is taken in the Spring of the Year, to displace these useless Branches (as was before directed) there will be no such thing as *irregular*, *false*, or *luxuriant Branches*, at the *Winter-Pruning*; therefore it is to no purpose to amuse People with a Cant of Words, which when fully understood, signify just nothing at all.

But since I have explain'd the different Methods of *Pruning* the several Sorts of Fruits, under their respective Articles, I shall forbear repeating it again in this Place; but shall only give some general Hints

for the *Pruning* of Standard Fruit-Trees, and so conclude.

First, you should never shorten the Branches of these Trees, unless it be where they are very luxuriant, and grow irregular on one Side of the Tree, attracting the greatest Part of the Sap of the Tree, where the other Parts are unfurnished with Branches, or are rendred very weak; in which Case the Branch should be shortened down so low, as is necessary, in order to obtain more Branches, to fill up the Hollow of the Tree; but this is only to be understood of *Pears* and *Apples*, which will produce Shoots from Wood of three or four Years old; whereas most Sorts of Stone-Fruit will gum and decay, after such Amputations.

But from hence I would not have it understood, that I would direct the reducing of these Trees into an exact spherical Figure, since there is nothing more detestable, than to see a Tree (which if permitted to grow as it is naturally dispos'd, with its Branches produced at proportionable Distances, according to the Size of the Fruit) by endeavouring to make it exactly regular in its Head, so crowded with small weak Branches, as to prevent the Air from passing between them; which will render it incapable to produce Fruit; all that I intend by this stopping of luxuriant Branches, is only when one or two such happen on a young Tree, where they intirely draw all the Sap from the weaker Branches and starve them; and then it is proper to use this Method, which should be done in time, before they have exhausted the Roots too much.

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Whenever this happens to Stone-Fruit, which suffer much more by cutting than the former Sorts, it should be remedied by stopping or pinching those Shoots in the Spring, before they have obtained too much Vigour; which will cause them to push out Side-branches, whereby the Sap will be diverted from ascending too fast to the leading Branch; (as hath been directed for Wall-Trees) but this must be done with Caution, as before.

You must also cut out all dead or decaying Branches, which cause their Heads to look very ragged, especially at the Time when the Leaves are upon the Tree, these being destitute of them, have but a despicable Appearance; besides, these do attract noxious Particles from the Air, which are injurious to the Trees; therefore the sooner they are cut out, the better; in doing of this, you should observe to cut them close down to the Place where they were produced, otherwise that Part of the Branch left will decay and prove equally hurtful to the Tree; for it seldom happens that when a Branch begins to decay, that it does not die quite down to the Place where it was produced, and if permitted to remain long uncut, does often infect some of the other Parts of the Tree. If the Branches are large which you cut off, it will be very proper, after having smoothed the cut Part exactly even with a Knife, Chissel or Hatchet, to put on a Plaster of grafting Clay, which will prevent the Wet from soaking into the Tree, at the wounded Part.

All such Branches which run cross each other, should also be cut out; for these not only occasion a Confusion in the Head of the Tree, but by lying over each other, do rub

off their Bark by their Motion, and very often occasion them to canker, to the great Injury of the Tree; and on old Trees (especially Apples) there are often young vigorous Shoots produced from the old Branches near the Trunk, which grow upright into the Head of the Trees; these therefore should carefully be cut out every Year, lest by being permitted to grow, they fill the Tree too full of Wood, which should always be guarded against, since it is impossible for such Trees to produce so much, or so good Fruit, as those Trees, whose Branches grow at a farther Distance, whereby the Sun and Air do freely pass between them, in every Part of the Tree.

These are all the general Directions which are proper to be given in this Place, since not only the particular Methods, but also the proper Seasons for *Pruning* all the different Kinds of Fruit, are fully exhibited under their several Articles.

PRUNUS; The Plumb-Tree.

The *Characters* are;

The Flower consists of five Leaves, which are placed in a circular Order, and expand in form of a Rose; from whose Flower-cup rises the Pointal, which afterwards becomes an oval or globular Fruit, having a soft fleshy Pulp, surrounding a hard oblong Stone, for the most part pointed; to which should be added, The Foot-stalks are long and slender, and have but a single Fruit upon each.

The *Species* are;

1. PRUNUS; *fructu parvo præcoxi*. Tourn. The Jean-hative, or White Primordian. This is a small white Plumb, of a clear yellow Colour, cover'd over with a white Flew, which easily wipes off; it is a pretty good Bearer, and for its coming

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very early, deserves a Place in every good Garden of Fruit. This ripens the Beginning of July.

2. PRUNUS; *fructu magno, crasso subacido. Tourn.* Damas noir hative, i. e. The early black Damask, commonly call'd, The Morocco Plum. This is a pretty large Plum of a round Shape, divided with a Furrow in a Middle (like Peaches) the Out-side is of a dark, black Colour, covered with a light violet Bloom; the Flesh is yellow, and parts from the Stone. It ripens in the Middle of July.

3. PRUNUS; *fructu parvo, dulci atro caeruleo. Tourn.* The little black Damask Plumb. This is a small black Plumb, cover'd over with a violet Bloom; the Juice is richly sugar'd, the Flesh parts from the Stone, and it is a good Bearer. Ripe the Middle of July.

4. PRUNUS; *fructu magno, dulci, atro caeruleo. Tourn. Gros. Damas Violet de Tours*, i. e. Great Damask Violet of Tours. This is a pretty large Plumb, inclining to an oval Shape, the Out-side is of a dark Blue, cover'd with a Violet Bloom; the Juice is richly sugar'd, and the Flesh parts from the Stone. Ripe the Middle of July.

5. PRUNUS; *fructu rotundo atro rubente.* The Orleans Plumb. This Fruit is so well known to almost every Person, that it is needless to describe it; it is a very plentiful Bearer, which has occasion'd its being so generally planted by those Persons who supply the Markets with Fruit; but it is an indifferent Plum.

6. PRUNUS; *fructu oblongo, atro rubente.* The Fotheringham Plum. This Fruit is somewhat long, deeply furrow'd in the Middle; the Flesh is firm, and parts from the

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Stone; the Juice is very rich. This ripens about the Middle of July.

7. PRUNUS; *fructu nigro, carne dura. Tourn.* The Perdrigon Plum. This is a middle-siz'd Plum, of an oval Shape, the Out-side is of a very dark Colour, cover'd over with a violet Bloom; the Flesh is firm and full of an excellent rich Juice; this is greatly esteem'd by the Curious. Ripe the latter End of July.

8. PRUNUS; *fructu magno è violaceo rubente, suavissimo saccharato. Tourn.* The Violet Perdrigon Plum. This is a large Fruit rather round than long, of a blueish-red Colour on the Out-side; the Flesh is of a yellowish Colour, pretty firm, and closely adheres to the Stone; the Juice is of an exquisite rich Flavour. This ripens the End of July.

9. PRUNUS; *fructu ovato, ex albo flavescente.* The white Perdrigon Plumb. This is a middling Plumb, of an oblong Figure, the Out-side is yellow covered with a white Bloom, the Flesh is firm and well-tasted, it is a very good Fruit to eat raw, or for Sweet-meats, having an agreeable Sweetness mix'd with an Acidity.

10. PRUNUS; *fructu ovato, magno rubente. Tourn.* The Red Imperial Plumb, sometimes called, The Red Bonum Magnum. This is a large oval-shap'd Fruit, of a deep red Colour, covered with a fine Bloom; the Flesh is very dry, and very indifferent to be eaten raw; but is excellent for making Sweet-meats. This is a great Bearer. Ripe the End of July.

11. PRUNUS; *fructu ovato, magno flavescente. Tourn.* White Imperial, Bonum Magnum; white Holland or Mogul Plum. This is a large oval-shap'd Fruit, of a yellowish Colour; powdered over with

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a white Bloom; the Flesh is firm, and adheres closely to the Stone; the Juice is of an acid Taste, which renders it unpleasant to be eaten raw; but it is very good for Baking or Sweet-meats: It is a great Bearer, and is ripe towards the End of *August*.

12. PRUNUS; *fructu ovato caruleo*. The Cheston Plum. This is a middle-siz'd Fruit, of an oval Figure, the Out-side is of a dark Blue, powder'd over with a violet Bloom; the Juice is rich, and it is a great Bearer. Ripe the End of *July*.

13. PRUNUS; *fructu maximo, rotundo flavo & dulci*. Tourn. *Prune d'Abricot*, i. e. The Apricock Plum. This is a large round Fruit of a yellow Colour on the Out-side, powder'd over with a white Bloom; the Flesh is firm and dry, of a sweet Taste, and comes clean from the Stone. This ripens the End of *July*.

14. PRUNUS; *fructu subrotundo, ex rubro & flavo mixto*. The Maitre Claude. This is a middle-siz'd Fruit, rather round than long, of a fine mix'd Colour, between Red and Yellow; the Flesh is firm, and parts from the Stone, and has a delicate Flavour. Ripe the End of *July*.

15. PRUNUS; *fructu rubente dulcissimo*. Tourn. La Roche-Courbon, or Diapree rouge, i. e. the Red Diaper Plum. This is a large round Fruit, of a reddish Colour, powder'd over with a violet Bloom; the Flesh adheres closely to the Stone, and is of a very high Flavour; ripe in the Beginning of *August*.

16. PRUNUS; *fructu rotundo, flavescente*. La Reine Claude, i. e. Queen Claudia. This is a small round Fruit, of a yellowish Colour,

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powder'd over with a pearl-colour'd Bloom; the Flesh is firm and thick, quits the Stone, and its Juice is richly sugar'd; ripe the Middle of *August*.

17. PRUNUS; *fructu rotundo, nigro-purpureo, majori dulci*. Tourn. Myrabolan Plum. This is a middle-siz'd Fruit, of a round Shape, the Out-side is a dark Purple, powder'd over with a violet Bloom; the Juice is very sweet; it is ripe the Middle of *August*.

18. PRUNUS; *fructu rotundo è viridi flavescente, carne dura suavissimo*. The Green Gage Plum. This is one of the best Plums in England; it is of a middle Size, round, and of a yellowish-green Colour on the Out-side; the Flesh is firm, of a deep green Colour, and parts from the Stone; the Juice has an exceeding rich Flavour; and it's a great Bearer; ripe the End of *July*. This is called *Gros Damas Vert*, i. e. The Great Green Damask, in France.

18. PRUNUS; *fructu Amygdalino*. Tourn. Rognon de Coq; i. e. Cock's Testicles. This is an oblong Fruit, deeply furrowed in the Middle, so as to resemble the Testicles; it is of a whitish Colour on the Out-side, streak'd with red; the Flesh of it adheres firmly to the Stone, and it is late ripe.

19. PRUNUS; *fructu rotundo flavo dulcissimo*. Drap d'Or, i. e. the Cloth of Gold Plum. This is a middle-siz'd Fruit, of a bright yellow Colour, spotted or streak'd with red on the Out-side; the Flesh is yellow, and full of an excellent Juice; it is a plentiful Bearer, and ripens about the End of *July*.

20. PRUNUS; *fructu cerei coloris*. Tourn. Prune de Sainte Catherine, i. e. St. Catharine Plum. This is a large oval-shap'd Fruit, somewhat

But; the Outside is of an Amber Colour, powder'd over with a whitish Bloom, but the Flesh is of a bright yellow Colour, is dry and firm, adheres closely to the Stone, and has a very agreeable sweet Taste. This ripens at the End of *August*, and is very subject to dry upon the Tree, when the Autumn proves warm and dry. This makes fine Sweet-meats; and is a plentiful Bearer.

21. PRUNUS; *fructu ovato rubente dulci*. The Royal Plum. This is a large Fruit of an oval Shape, drawing to a Point next the Stalk; the Outside is of a light-red Colour, powder'd over with a whitish Bloom; the Flesh adheres to the Stone, and has a fine sugary Juice. This ripens the End of *July*.

22. PRUNUS; *fructu parvo ex viridi flavescente*. Tourn. La Mirabelle. This is a small, round Fruit, of a greenish Yellow on the Outside; the Flesh parts from the Stone, is of a bright yellow Colour, and has a fine sugary Juice. This is a great Bearer, and ripens the Beginning of *August*.

23. PRUNUS; *Brignoniensis, fructu suavissimo*. Tourn. Prune de Brignole, i. e. the Brignole Plum. This is a large, oval-shap'd Fruit, of a yellowish Colour, mix'd with red on the Outside; the Flesh is of a bright yellow Colour, is dry, and of an excellent rich Flavour. This ripens the Middle of *August*, and is esteem'd the best Plum for Sweetmeats yet known.

24. PRUNUS; *fructu magno, è violaceo rubente, serotino*. Tourn. Imperatrice, i. e. the Empress. This is a large round Fruit, of a violet-red Colour, very much powder'd with a whitish Bloom; the Flesh is yellow, cleaves to the Stone, and

is of an agreeable Flavour. This ripens about the Middle of *September*.

25. PRUNUS; *fructu ovato, maximo, flavo*. Tourn. Prune de Monsieur, i. e. the Monsieur Plum. This is sometimes called the *Wentworth* Plum. It is a large, oval-shap'd Fruit, of a yellow Colour both within and without, very much resembling the *Bonum Magnum*; but the Flesh of this parts from the Stone, which the other doth not. This ripens towards the latter End of *August*, and is very good to preserve, but the Juice is too sharp to be eaten raw; it is a great Bearer.

26. PRUNUS; *fructu majori rotundo, rubro*. Tourn. Prune Cerizette, i. e. the Cherry Plum. This Fruit is commonly about the Size of the *Ox-heart Cherry*, is round, and of a red Colour; the Stalk is long, like that of a Cherry, which this Fruit so much resembles, as not to be distinguished therefrom at some Distance. The Blossoms of this Tree come out very early in the Spring, and being tender, are very often destroy'd by Cold; but it affords a very agreeable Prospect in the Spring; for these Trees are generally cover'd with Flowers, which open about the same time as the Almonds, so that when they are intermix'd therewith, they make a beautiful Appearance before many other Sorts do put out: But where the Fruit is desired, they should have a South-East Wall.

27. PRUNUS; *fructu albo, oblongiusculo, acido*. Tourn. The white Pear Plum. This is a good Fruit for Preserving, but is very unpleasant if eaten raw; it is very late ripe, and seldom planted in Gardens, unless for Stocks to bud some tender

Sorts of *Peaches* upon, for which Purpose it is esteem'd the best amongst all the Sorts of Plums.

28. PRUNUS; *Myrtellinum*. Park. The Muscle Plumb. This is an oblong, flat Plum, of a dark-red Colour; the Stone is large, and the Flesh but very thin, and not well tasted, so that its chief Use is for Stocks, as the former.

29. PRUNUS; *fructu parvo violaceo*. The St. Julian Plum. This is a small Fruit, of a dark, Violet Colour, powder'd over with a mealy Bloom; the Flesh adheres closely to the Stone, and in a fine Autumn will dry upon the Tree. The chief Use of this Plum is for Stocks, to bud the more generous Kinds of Plums and Peaches upon, as also for the *Bruxelles* Apricock, which will not thrive so well upon any other Stock.

30. PRUNUS; *sylvestris, major*. F. B. The Black Bullace-Tree. This grows wild in the Hedges in divers Parts of *England*, and is rarely cultivated in Gardens.

31. PRUNUS; *sylvestris, fructu majore albo*. Raii Syn. The White Bullace-Tree. This grows wild, as the former, and is seldom cultivated in Gardens.

32. PRUNUS; *sylvestris*. Ger. *Emae*. The Black-thorn, or Sloe-Tree. This is very common in the Hedges almost every where; the chief Use of this Tree is to plant for Hedges, as *White-thorn*, &c. and being of quick Growth, is very proper for that Purpose.

All the Sorts of *Plums* are propagated by budding or grafting them upon Stocks of the *Muscle*, *White Pear*, *St. Julian*, *Bonum Magnum*, or any other Sorts of free-shooting *Plums*; the Manner of Railing these Stocks hath been already exhibited under the Article of

Nurseries, therefore need not be repeated again in this Place; but I would observe, that Budding is much preferable to Grafting, for these Sorts of Fruit-Trees, which are very apt to gum, where-ever there are large Wounds made on them.

The Trees should not be more than one Year's Growth from the Bud, when they are transplanted, for if they are older, they seldom succeed so well, being very subject to canker; or if they do take well to the Ground, commonly produce only two or three luxuriant Branches; therefore it is much more advisable to chuse young Plants.

The Manner of preparing the Ground (if for Walls) is the same as for *Peaches*, as is also the pruning the Roots and planting; and therefore I shall forbear repeating it again. The Distance which these Trees should be planted at, must not be less than fourteen or sixteen Feet, and if the Wall is low, they should be placed eighteen Feet asunder.

Plums should have a middling Soil, neither too wet and heavy, nor over light and dry; in either of which Extreams they seldom do well: And those Sorts which are planted against Walls, should be placed to an East or South East Aspect, which is more kindly to these Fruits than a full South Aspect, on which they are subject to shrivel, and be very dry, and many Sorts will be extream mealy, if expos'd too much to the Heat of the Sun; but most Sorts will ripen extreamly well on Espaliers, if rightly manag'd.

There are some Persons who plant *Plums* for Standards, in which Method some of the ordinary Sorts will bear very well; but then the Fruit

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Fruit will not be near so fair as those produced on Espaliers, and will be more in danger of being bruised or blown down by strong Winds. The Distance of placing them for Espaliers must be the same as against Walls, as must also their Pruning and Management, so that whatever may be hereafter mention'd for one, should be also understood for both.

Plums do not only produce their Fruit upon the last Year's Wood, but also upon Cursons or Spurs, which come out of Wood that is two or three Years old; so that there is not a Necessity of shortening the Branches, in order to obtain new Shoots annually, in every Part of the Tree (as in *Peaches*, *Nectarines*, &c. hath been directed) since the more these Trees are pruned, the more luxuriant they grow, until the Strength of them are exhausted, and then they gum and spoil: Therefore the safest Method to manage these Trees, is, to lay in their Shoots horizontally, as they are produced, at equal Distances, in proportion to the Length of their Leaves; and where there is not a sufficient Quantity of Branches to fill up the Vacancies of the Tree, there the Shoots may be pinch'd the Beginning of *May* (in the Manner as hath been directed for *Peaches*, &c.) which will cause them to produce some lateral Branches to supply those Places; and during the growing Season, all foreright Shoots should be displaced, and such as are to remain must be regularly train'd in to the Wall or Espalier, which will not only render them beautiful, but also give to each an equal Advantage of Sun and Air: And hereby the Fruit will be always kept in a ductile, growing State, which they seldom

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are, when over-shaded with Shoots some Part of the Season, and then suddenly expos'd to the Air, by the taking off or training those Branches in their proper Position.

With thus carefully going over these Trees in the growing Season, there will be but little Occasion for cutting them in Winter Pruning, which (as I before have said) is of ill Consequence to all Sorts of Stone-Fruit: Besides, many of these Fruits do produce Blossom-buds, at the Extremity of their former Year's Shoots; so that when those are shortened, the Fruit is cut away, and hereby the Number of Shoots is increased: For whenever a Branch is shortened, there is commonly two or more Shoots produced from the Eyes immediately below the Cut; so that by thus unskilfully Pruning, many Persons crowd their Trees with Branches, and thereby render what little Fruit the Trees do produce, very small and ill-tasted, which is very commonly found in too many Gardens, where the Manager, perhaps, thinks himself a complete Master of his Business. For nothing is more common, than to see every Branch of a Fruit-Tree pass the Discipline of the Knife, however agreeable it be to the several Sorts of Fruits.

Those few Rules before laid down, will be sufficient, if due Observation be join'd therewith, to instruct any Person in the right Management of these Sorts of Fruit-Trees, therefore I shall not say any more on that Subject, lest, by multiplying Instructions, it may render it more obscure to a Learner.

PSEUDOACACIA; Virginian Acacia, *vulgô*.

The Characters are;

It hath a papilionaceous Flower, from whose Flower-cup rises the Point,

al, wrapped up in a fimbriated Membrane, which afterwards becomes a Pod, opening into two Parts, in which are contained several kidney-shap'd Seeds.

The Species are;

1. PSEUDOACACIA; *vulgaris*. Tourn.
Common Virginian Acacia.

2. PSEUDOACACIA; *Americana*, *latifolia*, *flore roseo*. Plum.

The first of these Trees is very common in England, especially in the Gardens near London, where are several very large old Trees, which have been several Years standing; But the second Sort is, at present, very rare in England.

These Trees may be propagated by sowing their Seeds in the Spring, upon a Bed of light fresh Earth, and when the Plants are come up, they should be carefully clear'd from Weeds, and in very dry Weather, if they be refresh'd with Water, it will greatly promote their Growth; in this Bed the Plants should remain 'till the latter End of March following, at which time they should be transplanted out into a Nursery, in Rows, three Feet asunder, and the Plants eighteen Inches Distance in the Rows, observing to lay a little Mulch upon the Surface of the Ground about their Roots, to prevent the Earth's drying too fast: During the Summer Season you should carefully clear 'em from Weeds, and if they produce irregular Branches, they should be prun'd off, while young. The Spring following the Ground between the Rows should be carefully dug, that the Roots of the Trees may the more easily extend themselves every Way; and in Summer, the Weeds should be constantly hoed down, to prevent their injuring the Plants.

When the Trees have remain'd in this Nursery three Years, they

should be transplanted where they are design'd to grow; for if they are permitted to remain in the Nursery too long, they will not bear transplanting, their Roots creeping very far just under the Surface of the Earth, which, when too much cut, do seldom abide long in Vigour.

These Trees are very hardy, in respect to Cold, but they will not endure to be exposed too much to strong Winds, which continually break their brittle Branches, and render 'em unsightly; so that many People have neglected to cultivate these Trees on that Account; but when they are intermix'd with other large growing Trees, in great Wildernesses, they make a beautiful Variety, and in June they are covered with large Bunches of sweet-smelling Flowers.

Indeed, I can't recommend them for planting Avenues, which was the great Use they were formerly applied to, since in such Places they would be greatly exposed to the Wind, which would cause them to have a ragged Appearance, by the continual snapping of their Branches: Nor are they very proper to plant in Gardens, because their Roots do extend to a great Distance, and emaciate the Soil; and the Numbers of Suckers, which they are apt to produce, render them very troublesome in open Gardens; but for large Wildernesses, they are very proper; where, if the Soil be moist, they will grow to a considerable Magnitude.

I have seen some of these Trees upwards of forty Feet high, which have divided at a little Distance from the Ground, into three or four Branches, each of which have been equal to a large Tree; so that it should not be planted too near other

other Trees, left, by its great Growth, it over shadows and destroys them. In many Gardens near London, these Trees have produced good Seeds, from whence a great Number of Plants have been rais'd.

PSEUDO-DICTAMNUS; Bastard-Dittany.

The Characters are;

It hath a labiated Flower consisting of one Leaf, whose Upper lip or Helmet is arched, and generally cut into two Segments; but the Under-lip (or Beard) is divided into three Parts. Out of the Funnel-shap'd Flower-cup rises the Pointal, attended by four Embryo's, which afterwards become so many oblong Seeds, enclos'd in the Flower-cup.

The Species are;

1. **PSEUDO-DICTAMNUS**; *acetabulis Molluca*. C. B. P. Bastard-Dittany, with the Pan or Hollow of Molluca Balm.

2. **PSEUDO-DICTAMNUS**; *Hispanicus, scrophularia folio*. Tourn. Spanish Bastard-Dittany, with a Figwort Leaf.

3. **PSEUDO-DICTAMNUS**; *Hispanicus, amplissimo folio, candicante & villoso*. Tourn. Spanish Bastard-Dittany, with a large, hoary, and hairy Leaf.

4. **PSEUDO-DICTAMNUS**; *verticillatus, inodorus*. C. B. P. Whorled Bastard-Dittany without Smell.

5. **PSEUDO-DICTAMNUS**; *Orientalis, foliis circinatis*. T. Cor. Eastern Bastard-Dittany, with round Leaves.

There are several other Varieties of this Plant, which are preserved in Botanick Gardens, but as they have little Beauty or Use, so it will be needless to enumerate them in this Place.

All these Plants may be propagated by Seeds, parting of their Roots, or Cuttings; but the two last being

the most expeditious Methods, are generally practis'd. The best time to transplant and part their Roots is in the Spring, before they begin to grow, that the Off-sets may take Root before the dry Weather. These should be planted in a poor, dry Soil, where they will endure the Cold much better than if planted in a richer Ground. There is no great Beauty in these Plants, but as they are sometimes preserved by curious Persons, I thought it proper to mention them in this Place.

PSYLLIUM; Fleawort.

The Characters are;

This Plant agrees with Plantain and Bucks-horn Plantain in every respect, excepting that this rises up with leafy Stalks, and divides into many Branches; whereas both the others produce their Flowers upon naked Pedicles.

The Species are;

1. **PSYLLIUM**; *majus, erectum*. C. B. P. Greater upright Fleawort.

2. **PSYLLIUM**; *majus, supinum*. C. B. P. Greater Fleawort, whose Branches spread to the Ground.

3. **PSYLLIUM**; *Indicum, foliis crenatis*. J. B. Indian Fleawort, with notch'd Leaves.

There are several other Varieties of these Plants, distinguished by Writers in Botany; but since they are of little Use or Beauty, I shall pass 'em by without naming.

These Plants may be propagated by sowing of their Seeds in the Spring, on a Bed of light Earth, and when they are come up they should be clear'd from Weeds, pulling out at the same time some of the Plants, where they stand too close, leaving the remaining ones about eight or nine Inches asunder; after which they will require no farther Care, but to clear 'em from Weeds; and in June they

will flower, and their Seeds will ripen in Autumn.

The second Sort will abide two or three Years, provided they are on a poor, dry Soil; but the other two Sorts perish every Year.

The first Sort, which is the most common, is used in Medicine; but the other two are never used in England.

PTARMICA; Sneezwort.

The Characters are;

It hath radiated Flowers, whose Disk consists of many Florets, but the Borders are compos'd of half Florets; the Embryo's are lodg'd in the Flower-cup, which is scaly, each of which becomes one slender Seed.

The Species are;

1. PTARMICA; *vulgaris, folio longo, serrato, flore albo.* J. B. Common Sneezwort, with a long serrated Leaf, and a white Flower.

2. PTARMICA; *vulgaris, flore pleno.* Clus. Hist. Common Sneezwort, with a double Flower, by some call'd Double Pellitory.

3. PTARMICA; *foliis profunde serratis, latè viridibus, elatior.* H. L. Taller Sneezwort, with broad green Leaves deeply serrated.

4. PTARMICA; *Alpina, incanis, serratis, foliis.* H. L. Alpine Sneezwort, with hoary serrated Leaves.

5. PTARMICA; *incana, pinnulis cristatis.* T. Cor. Hoary Sneezwort, with crested Leaves.

The first of these Plants is very common upon Heaths and in shady Places in divers Parts of England, and is rarely cultivated in Gardens. This is the Sort directed for Medicinal Use in the College Dispensatory.

The second Sort is a Variety of the first, which was accidentally obtain'd: The Flowers of this Kind are very double, and generally produced in large Bunches; which,

together with its long Continuance in Flower, renders it worthy of a Place in every good Garden. This Sort propagates it self very fast by its Roots, which spread very far under Ground, so that it should not be planted too near other Plants, lest it over-run and destroy them.

The best time to transplant these Roots is in Autumn, that they may take Root before Winter, so that they will be in no Danger of suffering from Drought the Spring following; and will be capable of producing stronger Stalks, and a greater Quantity of Flowers.

This Plant always makes the best Appearance when its Roots are confined; because, when they are suffered to spread, the Stalks come up thin and straggling, and the greatest Beauty of it is, to see it grow close in large Tufts, for which Reason many Persons chuse to plant it in Pots, fill'd with light, sandy Earth, in which, if they are duly water'd in dry Weather, they will thrive exceedingly, and make a very handsome Appearance. It is also very proper to plant on such Borders as are gravelly and poor (on which few other things will thrive) where the Roots of this Plant will be confined, more than if planted in a better Soil, and they will flower very well.

The third and fourth Sorts are seldom preserved in Flower-Gardens, being Plants of little Beauty. These may be propagated by parting their Roots, either in Spring or Autumn, and will grow upon almost any Soil, or in any Situation.

The fifth Sort was brought from the Levant by Monsieur Tournefort, but was known long before: Many of the old Botanists were of Opinion,

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Opinion, that the Seeds of this Plant was the *Semen Santonicum* of the Shops; but it is now generally believed to be the Seeds of some other Plant of that Kind. But however, this Plant deserves a Place in every good Garden, for the Variety of its silver-colour'd Leaves, together with its long Continuance in flower.

It may be propagated by planting Cuttings, during any of the Summer Months, upon a Bed of light, fresh Earth, observing to water and shade them until they have taken Root; after which they will require no farther Care, but only to clear them from Weeds, until *September* following; when they should be carefully taken up, preserving a Ball of Earth to the Roots of each Plant, and planted in a warm dry Situation; and if it be on a poor gravelly or rubbishing Soil, they will endure the Cold better, and make much more beautiful Plants. This Sort seldom perfects Seeds in *England*.

PULEGIIUM; Penny-Royal or Pudding-Grafs.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Upper-lip (or Crest) is intire, but the Lower-lip (or Beard) is divided into three Parts; out of the Flower-cup rises the Pointal, attended by four Embryo's, which afterwards become so many Seeds; to which may be added, That the Flowers grow in short thick Whorles.

The Species are;

1. **PULEGIIUM**; *latifolium*. C. B. P. Common or broad-leav'd Penny-Royal.

2. **PULEGIIUM**; *Hispanicum, erectum, staminibus florum extantibus*. Upright Spanish Penny Royal, whose

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Stamina stand out from the Flowers.

3. **PELUGIUM**; *angustifolium*. C. B. P. Narrow-leav'd Penny-Royal.

4. **PULEGIIUM**; *angustifolium, flore albo*. H. R. Par. Narrow-leav'd Penny-Royal, with a white Flower.

The first of these Plants is very common on moist Heaths in divers Parts of *England*. This is the Sort recommended by the Physicians for Medicinal Use: But the second Sort, although not a Native of *England*, hath obtain'd in the Gardens, where Medicinal Plants are cultivated, so much as to have quite superseded the other in the Markets, for its upright Growth, early Flowering, and more beautiful Appearance; but whether it is equally good for Use, I shall leave to those to whose Province it more immediately belongs to examine.

The third Sort is also recommended to be used in Medicine: This is not of *English* Growth, but is very hardy, and will thrive very well if planted on a moist Soil; as will also the fourth Sort, which is only a Variety of the third, from which it differs in nothing but the Colour of its Flowers.

All these Plants propagate themselves very fast by their Branches trailing upon the Ground, which emit Roots at every Joint, and fasten themselves into the Earth, and send forth new Branches; so that no more is required in their Culture, than to cut off any of these rooted Branches, and plant them out in fresh Beds, allowing them at least a Foot from Plant to Plant every Way, that they may have Room to grow.

The best Time for this Work is in *September*, that the Plants may be

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be rooted before Winter; for if the old Roots are permitted to remain so close together, as they generally grow in the Compass of a Year, they are subject to rot in Winter; besides, the young Plants will be much stronger, and produce a larger Crop the succeeding Summer than if they were remov'd in the Spring. These Plants do all love a moist strong Soil, in which they will flourish exceedingly.

PULMONARIA; Lungwort.

The Characters are;

The Flower consists of one Leaf, which is shap'd like a Funnel, whose upper Part is cut into several Segments; from its fistulous Flower-cup, which is for the most part pentagonal, rises the Pointal, encompass'd by four Embryo's, which afterwards become so many Seeds enclos'd in the Flower-cup.

The Species are;

1. **PULMONARIA**; *vulgaris, maculoso folio*. Clus. Hist. Common spotted Lungwort, by some call'd Sage of Jerusalem, and Jerusalem Cow-slip.

2. **PULMONARIA**; *major, non maculosa*. J. B. Greater Lungwort, without Spots.

3. **PULMONARIA**; *foliis echii*. Lob. Ic. Lungwort, with Leaves like Vipers-Bugloss.

4. **PULMONARIA**; *maxima, foliis quasi saccharo incrustatis*. Pluk. Phyt. Greatest Lungwort with Leaves very much spotted.

There are several other Species of this Plant which are preserv'd in curious Botanick Gardens for Variety; but those here mention'd are the principal Kinds which are cultivated in the English Gardens.

The first Sort is us'd in Medicine as a Vulnerary Herb, but is by many People preserv'd in Gardens; as are also the three other Sorts, for the Variety of their spotted

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Leaves, and pretty Bunches of blue Flowers.

These Plants may be cultivated by parting of their Roots, which may be done either in the Spring or Autumn; but if the Ground be moist into which they are planted, it is better to be done in the Spring, otherwise the Autumn is the most preferable Season, that the Plants may be well rooted before the dry Weather comes on in the Spring, which will cause them to flower much stronger.

The Soil in which they are planted, should not be rich, but rather a fresh, light, sandy Ground, in which they will thrive much better than in a richer Soil, in which they are very subject to rot in Winter. The fourth Sort makes the best Appearance of all the Kinds, and is very hardy, will grow either in Sun or Shade, and, taking up little Room, is worthy of a Place in every good Garden for the Sake of Variety.

PULSATILLA; Pasque-Flower.

The Characters are;

The Flower consists of several Leaves, which are plac'd in a circular Order, and expand in Form of a Rose; out of the Middle of which rises a Pointal, beset, for the most part, with Chives; which afterwards becomes a Fruit, in which the Seeds are gather'd, as it were, into a little Head, each ending in a small Hair: To which must be added, Some little Leaves encompassing the Pedicle below the Flower, as in the Anemone; from which the Pasque-Flower differs, in the Seed ending in a Tail.

The Species are;

1. **PULSATILLA**; *folio crassiore, & majore flore*. C. B. P. Pasque-Flower, with thicker Leaves and a larger Flower.

2. **PULSA-**

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2. PULSATILLA; *flore violaceo, duplici fimbriato*. H. R. Par. Pasque-Flower, with a double-fring'd Violet-colour'd Flower.

3. PULSATILLA; *flore minore nigricante*. C. B. P. Pasque Flower, with a smaller darker Flower.

4. PULSATILLA; *flore rubro obtuso*. C. B. P. Red Pasque-Flower.

5. PULSATILLA; *flore albo*. C. B. P. White Pasque-Flower.

6. PULSATILLA; *lutea, Apii hortensis folio*. C. B. P. Yellow Pasque-Flower, with a Leaf of Garden Parsley.

7. PULSATILLA; *lutea, Alpina, hispida*. C. B. P. Yellow hairy Pasque-Flower of the Alps.

The first of these Plants is common in divers Parts of *England*; it grows in great Plenty on *Gogmagog-Hills*, on the Left-hand of the Highway leading from *Cambridge* to *Haveril*, just on the Top of the Hill; also about *Hildersham*, six Miles from *Cambridge*; and on *Bernack-Heath*, not far from *Stamford*; and on *Southrop-Common*, adjoining thereto; also on mountainous and dry Pastures, just by *Leadstone-Hall*, near *Pontefract* in *Yorkshire*. It flowers about the End of *March* or Beginning of *April*.

The other Sorts are less common in *England*, being all of them Natives of other Countries, and are only to be met with in some curious Gardens in *England*, where they are cultivated for the Beauty of their Flowers.

These Plants may be propagated by Seed, which should be sown in Boxes or Pots, fill'd with very light sandy Earth; observing not to cover the Seeds too deep with Mould, which will prevent their Rising, for they require no more than just to be cover'd. These Boxes should be placed where they

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may have the Morning Sun until ten of the Clock, but must be skreen'd from it in the Heat of the Day; and if the Season proves dry, the Earth should be often refresh'd with Water. The best Time for sowing of these Seeds is in *July*, soon after they are ripe, for if they are kept till Spring they seldom grow.

These Boxes or Pots, in which the Seeds are sown, should remain in this shady Situation until the Beginning of *October*, when they should be remov'd where they may enjoy the full Sun during the Winter Season: About the Beginning of *March* the Plants will begin to appear; at which Time the Boxes should be again remov'd where they may have only the Forenoon Sun, for if they are too much expos'd to the Heat, the young Plants will die away: They should also be refresh'd with Water in dry Weather, which will greatly promote their Growth; and they must be carefully preserv'd from Weeds, which if suffer'd to grow amongst them, will in a short Time destroy them.

When the Leaves of these Plants are intirely decay'd (which is commonly in *July*) you should then take up all the Roots, which being nearly of the Colour of the Ground, will be difficult to find while small; therefore you should pass the Earth through a fine Wire Sieve, which is the best Method to separate the Roots from the Earth (but notwithstanding all possible Care taken, yet there will be many small Roots left; so that the Earth should either be put into the Boxes again, or spread upon a Bed of light Earth, to see what Plants will arise out of it the succeeding Year:) The Roots being taken up, should be immediately planted

planted again on Beds of light, fresh, sandy Earth, about three or four Inches asunder, covering them about three Inches thick with the same light Earth. The Spring following, most of these Plants will produce Flowers, but they will not be so large and fair, as in the succeeding Years, when the Roots are larger.

They may also be propagated by parting of their Roots; the best Time for which is in *July* or *August*, when their Leaves are entirely decay'd, for if they are remov'd while their Leaves remain fresh, the Roots do commonly rot; these Roots being somewhat like those of *Anemonies*, may be divided into several Tubers or Heads, but should not be parted too small, which will occasion their Flowers to be very weak and but few in Number: They must always be planted in a fresh, undung'd Soil, and should have an open Situation; nor should the Roots be transplanted oftener than every other Year, if you design to have them produce strong Flowers: But the Earth upon the Surface of the Beds should be refresh'd at least once a Year, which will greatly encourage the Roots.

PUMPION; *vide* Pepo.

PUNICA: The Pomegranate-Tree.

The Characters are;

The Flower consists of many Leaves, plac'd in a circular Order, which do expand in Form of a Rose, whose Bell-shap'd multifid Flower-cup afterwards becomes a globular Fruit, having a thick, smooth, brittle Rind, and is divided into several Cells, which contain oblong, hard Seeds, surrounded with a soft Pulp.

The Species are;

1. PUNICA; *que malum Grana-*

tum fert. Casalp. The Common Pomegranate.

2. PUNICA; *fructu dulci. Tourn.* The Sweet Pomegranate.

3. PUNICA; *sylvestris. Cord. Hist.* The Wild Pomegranate.

4. PUNICA; *flore pleno, majore. Tourn.* The Double-flower'd Pomegranate.

5. PUNICA; *Americana, nana, seu humillima. Tourn.* The American Dwarf Pomegranate.

The first of these Trees is now pretty common in the *English* Gardens, where formerly it was nursed up in Cases, and preserv'd in Green-houses with great Care (as was also the Double-flowering Kind;) but they are both hardy enough to resist the severest Cold of our Climate in the open Air; and if planted against warm Walls, in a good Situation, the first Sort will often produce Fruit, which in warm Seasons will ripen tolerably well: But as these Fruits do not ripen till late in the Autumn, so they are seldom well tasted in *England*; for which Reason the Sort with double Flowers is commonly prefer'd to it: The Sort with sweet Fruit, as also the wild Sort, is less common in the *English* Gardens than the former two.

These Plants may be easily propagated by laying down their Branches in the Spring, which in one Year's time will take good Root; and may then be transplanted where they are design'd to remain. The best Season for transplanting of these Trees is in Spring, just before they begin to shoot: They should have a strong, rich Soil, in which they flower much better, and produce more Fruit than if planted on a dry poor Earth. But in order to obtain these in Plenty, there should be Care taken

in the pruning of the Trees; for want of which we often see these Trees very full of small Shoots, but do not find many Flowers produc'd upon them; therefore I shall set down Directions for pruning of these Trees, so as to obtain a great Quantity of Flowers and Fruit.

The Flowers of this Tree are always produc'd at the Extremity of the Branches which were produc'd the same Year: This therefore directs, that all weak Branches of the former Year should be cut out, and that the stronger should be shorten'd in Proportion to their Strength, in order to obtain new Shoots in every Part of the Tree. These Branches may be laid in against the Wall, about four or five Inches asunder; for as their Leaves are small, so there is not a Necessity of allowing them a greater Distance. The best Time for this Work is about *Michaelmas*, or a little later, according to the Mildness of the Season; but if they are left until Spring before they are prun'd, they seldom put out their Shoots so early; and the earlier they come out, the sooner the Flowers will appear, which is of great Consequence where Fruit is desir'd. In Summer they will require no other dressing, but to cut off very vigorous Shoots which grow from the Wall, and do never produce Flowers, (for it is the middling Shoots only which are fruitful) and when the Fruit is form'd, the Branches on which they are, should be fasten'd to the Wall to support them, otherwise the Weight of the Fruit, when grown large, will be apt to break them down.

Though, as I said before, the Fruit of this Tree seldom arrives to any Perfection in this Country,

so as to render it valuable; yet for the Beauty of its scarlet Colour, together with the Variety of its Fruit, there should be one Tree planted in every good Garden, since the Culture is not great which they require: The chief Care is to plant them upon a rich, strong, Soil, and in a warm Situation. Upon some Trees, which had these Advantages, I have observ'd a great Quantity of Fruit which have arriv'd to their full Magnitude; but I can't say they were well-flavour'd; but however, they made a very handsome Appearance upon the Trees.

The double-flowering Kind is much more esteem'd than the other in this Country, for the sake of its large, beautiful, double Flowers, which are of a most beautiful scarlet Colour, and if the Trees are supply'd with Nourishment, will continue to produce Flowers for near three Months successively, which renders it one of the most valuable Flowering-trees yet known. This must be prun'd and managed in the same Manner as hath been already directed for the Fruit-bearing Kind: But this Sort may be render'd more productive of its beautiful Flowers, by grafting it upon Stocks of the single Kind, which will check the Luxuriancy of the Trees, and cause them to produce Flowers upon almost every Shoot; by which Method I have had a low Tree, which was planted in the open Air, extremely full of Flowers, which made a very fine Appearance.

The Dwarf Sort was brought into *Europe* from the warmest Parts of *America*, where the Inhabitants cultivate it in their Gardens for the Beauty of its Flowers, together with its continuing to produce

Flowers and Fruit most Part of the Year, and do seldom grow above three Feet high. The Fruit of this Kind is seldom much larger than a Walnut, and not very pleasant to the Taste; so that 'tis rather cultivated for Shew than for the Sake of its Fruit.

This Plant may be propagated by Layers, in the same manner as the former Sorts, but must be planted in Pots fill'd with rich Earth, and preserv'd in a Stove, otherwise it is too tender to endure the Cold of our Winters; and in the Summer, when the Flowers begin to appear, if the Plants are expos'd to the open Air, the Buds will fall off, and never open; so that it should seldom be remov'd into the open Air, but be constantly preserv'd in the Stove with other Plants of the same Country; observing never to place them too near the Heat, which will cause them to produce long Shoots, but no Flowers will appear upon them; but rather let them have a moderate Warmth, in which they will thrive better than in a greater Heat.

I have heard of a Sort of *Pomegranate* with double-strip'd Flowers, and have seen it mention'd in some foreign Catalogues, but have not seen the Plant growing, tho' I believe it may be easily procur'd from *Italy*.

PURSLAIN; *vide* Portulaca.

PYRACANTHA; *vide* Mespilus.

PYRUS; The Pear-Tree.

The Characters are;

The Flower consists of several Leaves, which are plac'd in a circular Order, and do expand in Form of a Rose; whose Flower-cup afterwards becomes a fleshy Fruit, which is more produc'd toward the Foot-stalk than the Apple, but is hollow'd like a Navel

at the extreme Part; the Cells, in which the Seeds are lodg'd, are separated by soft Membranes, and the Seeds are oblong.

The Species are;

1. PYRUS; *sativa, fructu aetivo, parvo racemoso, odoratissimo*. Tourn. Petit Muscat. i. e. Little Musk Pear, commonly call'd, The Supream. This Fruit is commonly produced in large Clusters; it is rather round than long; the Stalk short, and when full ripe, the Skin is of a yellow Colour; the Juice is somewhat musky, and if gathered before it is too ripe, is an excellent Pear. This ripens the Beginning of July, and will continue good but for a few Days.

2. PYRUS; *sativa, fructu aetivo, minimo odoratissimo*. Tourn. Poire de Chio, i. e. The Chio Pear, commonly call'd, The little Bastard Musk Pear. This is smaller than the former, but is in Shape pretty much like that; the Skin, when ripe, has a few Streaks of red on the Side next the Sun, and the Fruit doth seldom hang in Clusters as the former, but in other Respects is nearly like it.

3. PYRUS; *sativa, fructu aetivo, parvo è viridi albedo*. Tourn. Poire Hativeau, i. e. The Hasting Pear, commonly call'd, The Green Chissel. This is a larger Pear than either of the former, and is more produc'd toward the Pedicle; the Skin is thin, and of a whitish green Colour when ripe; the Flesh is melting, and if not too ripe, of a sugary Flavour. This ripens in the Middle of July.

4. PYRUS; *sativa, fructu aetivo, partim saturatè rubente, partim flavoscentè*. Tourn. Muscadellies Rouges, i. e. The Red Muscadelle. It is also call'd La Bellissime, i. e. The Fairest. This is a large early Pear, of great Beauty;

Beauty; the Skin is of a fine yellow Colour, when ripe, beautifully strip'd with red; the Flesh is melting, and has a rich Flavour, if gathered before it be too ripe. This generally produces two Crops of Fruit in a Year; the first is commonly ripe about the Middle of July, and the second ripens in September; but this late Crop is seldom well-tasted.

5. PYRUS; *sativa, fructu astivo, parvo, flavescens moschato*. Tourn. Petit Muscat. *i. e.* The little Muscat. This is a small Pear, rather round than long; the Skin is very thin, and when ripe, of a yellowish Colour; the Flesh is melting, and of a rich musky Flavour, but will not keep long when ripe. This comes the Middle of July.

6. PYRUS; *sativa, fructu astivo, oblongo, ferrugineo, carne tenerâ moschata*. Tourn. Jargonelle. This is a very long Pear, of a Pyramidal Shape, having a long Foot-stalk; the Skin is pretty thick, of a Russet-green Colour from the Sun, but towards the Sun it is inclin'd to an Iron Colour; the Flesh is breaking, and has a rich musky Flavour. Ripe the Middle of July. This is one of the best Summer Pears yet known, and is certainly what all the French Gardeners did formerly call the *Cuisse Madam*, as may be easily observed by their Description of this Pear; but how that Name came to be applied to another Fruit in this Country, which is vastly inferior to it, I can't say.

7. PYRUS; *sativa, fructu oblongo, è viridi flavescens*. The Windsor Pear. This is an oblong Fruit, which is produced toward the Crown, but near the Stalk is drawn toward a Point; the Skin is smooth, and when ripe, of a yellowish-green

Colour; the Flesh is very soft, and if it be permitted to hang but two or three Days after it is ripe, it grows mealy, and is good for nothing.

8. PYRUS; *sativa, fructu astivo, oblongo, è viridi albo*. *Cuisse Madam; vulgò*. This, I am apt to believe, is what the French Gardeners call the *Jargonelle*; which, as I before observed, is now given to another Fruit, which is much preferable to this; so that the two Names are changed: For the *Jargonelle* is always placed amongst those which the French call bad Fruit; and the *Cuisse Madam* is set down amongst their best Fruit; which is certainly the Reverse with us, as they are now nam'd. This Pear is somewhat like the *Windsor*, but is more produc'd toward the Crown, and is smaller toward the Stalk; the Skin is smooth, of a pale-green Colour; the Flesh is apt to be mealy, if it stands to be ripe.

9. PYRUS; *sativa, fructu astivo, globoso sessili, moschato, maculis nigris, consperso*. Tourn. Orange Musquée, *i. e.* The Orange Musk. This is a middle-sized Pear, of a short globular Form; the Skin is of a yellowish Colour, spotted with black; the Flesh is musky, but is very apt to be a little dry and choaky. It ripens the End of July.

10. PYRUS; *sativa, fructu astivo, albido majori*. Tourn. Gros Blanquet, *i. e.* Great Blanket. This is also call'd *La Mussette d'Anjou*, *i. e.* The Bagpipe of Anjou. This is a large Pear, approaching to a round Form; the Skin is smooth, and of a pale-green Colour; the Flesh is soft, and full of Juice, which hath a rich Flavour. The Stalk is short, thick, and spotted, the Wood is slender, and the Leaf is very much like that

that of the Tree call'd the *Fargonelle*. This ripens the End of July.

11. PYRUS; *sativa, fructu asivo, albido, saccharato odoratissimo*. Tourn. The Blanquette, or Musk Blanquette; the little Blanket Pear. This Pear is much less than the former, and more pinch'd in near the Stalk, which is also short, but slenderer than that of the former; the Skin is soft, and of a pale-green Colour; the Flesh is tender, and full of a rich musky Juice. The Wood of this Tree is much stronger than is that of the former, and the Shoots are commonly shorter. This ripens the End of July.

12. PYRUS; *sativa, fructu asivo, albido, pediculo longo donato*. Tourn. Blanquette a longue queue, i. e. Long-stalk'd Blanket Pear. This Pear is in Shape somewhat like the former, but the Eye is larger, and more hollow'd at the Crown; towards the Stalk it is somewhat plumper, and a little crooked; the Skin is very smooth, white, and sometimes toward the Sun is a little colour'd; the Flesh is between melting and breaking, and is full of a rich sugary Juice. This ripens the Beginning of August.

13. PYRUS; *sativa, fructu asivo, oblongo, rufescente saccharato*. Tourn. Poire sans Peau, i. e. The Skinless Pear. It is also call'd *Fleur de Guigne*, i. e. Flower of Guigne; and *Roussellet hâtif*, i. e. The Early Russetlet. This is a middle-siz'd Fruit of a long Shape, and a reddish Colour, somewhat like the *Roussellet*; the Skin is extremely thin; the Flesh is melting, and full of a rich sugary Juice. This ripens the End of July.

14. PYRUS; *sativa, fructu asivo, utrinato, carne tenera, saccharata*.

Tourn. Muscat Robine, i. e. The Musk Robin Pear. This is also call'd *Poir à la Reine*; i. e. The Queen's Pear; *Poire d'Ambre*, i. e. The Amber Pear; and *Pucelle de Xaintonge*, i. e. The Virgin of Xaintonge. This is a small round Pear, of a yellowish Colour when ripe; the Flesh is melting, and has a rich musky Flavour. It is a great Bearer, and ripens the End of July.

15. PYRUS; *sativa, fructu asivo, turbinado moschato*. Le Bourdon Musqué, i. e. The Musk Drone Pear. This is a middle-siz'd, round Fruit, whose Skin is of a yellowish Colour when ripe; the Flesh is melting, and full of a high, musky Juice; but it must not hang too long on the Tree, for it is subject to grow mealy in a short Time. This ripens the End of July.

16. PYRUS; *sativa, fructu asivo, globoso, sessili, e viridi purpurea, cente saccharato, odorato*. Tourn. Orange Verte, i. e. The Green Orange Pear. This Pear hath been the most common of all the Sorts in France, which was occasion'd by the general Esteem it was in some Years since. This is a middle-siz'd, round Fruit, of a greenish Colour; but the Side next the Sun changes to a purple Colour when ripe; the Flesh is melting, and the Juice is sugar'd, with a little Perfume; the Eye is very hollow, and the Stalk is short. This ripens the Beginning of August.

17. PYRUS; *sativa, fructu asivo, oblongo minori, cinereo, odorato*. Tourn. Cassolette. This is so call'd from its being shap'd like a Perfuming-pot. It is a long Fruit, in Shape like the *Fargonelle*, of an Ash Colour; its Flesh is melting, and full of a perfum'd Juice, but is very apt

apt to rot in the Middle so soon as ripe, otherwise it would be esteem'd an excellent Pear. It is ripe the Beginning of August.

18. PYRUS; *sativa, fructu aetivo, turbinato, e viridi albido*. Poire Magdaléné, i. e. The Magdalene Pear. This is a large, round Pear, in Shape like a *Burgamot*; the Skin is green, and the Flesh is melting, but it is very subject to rot upon the Tree, which renders it not near so valuable as some others. It ripens the End of July.

19. PYRUS; *sativa, fructu aetivo, globoso, e viridi purpurascente*. Tourn. Gros Oignonet, i. e. The Great Onion Pear: It is also call'd *Amiréroux*, i. e. Brown Admir'd; and *Roy d'Esté*, i. e. King of Summer. This is a middle-liz'd, round Pear, of a brownish Colour next the Sun; the Flesh is melting, and the Juice is passably good. This ripens the End of July.

20. PYRUS; *sativa, fructu aetivo, globoso, sessili, ex albido flavescente saccharato, odorato*. Tourn. Robine. It is also call'd *Muscat d'Aoust*, i. e. The August Muscat; *Poire d'Averat*, i. e. The Averat Pear; and *Poire Royale*, i. e. The Royal Pear. This is a roundish, flat Pear, in Shape very like a *Burgamot*; the Stalk is long, straight, and a little spotted, and the Eye is a little hollowed; the Skin is smooth, and of a whitish-yellow Colour; the Flesh is breaking, but not hard, and its Juice is richly sugar'd and pertum'd: It is a great Bearer, and is esteem'd one of the best Summer Pears yet known. It ripens in August.

21. PYRUS; *sativa, fructu aetivo, globoso, sessili, odorato*. Tourn. Poire-rose, i. e. The Rose Pear. This is a short, round Fruit, of a yellowish-green Colour, but a little inclining to red on the Side next the Sun;

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the Stalk is very long and slender; the Flesh is breaking, and the Juice is musky. This ripens in August.

22. PYRUS; *sativa, fructu aetivo, globoso, albido, saccharato*. Tourn. Poire du Bouchet. This is a large, round whitish Pear, shap'd somewhat like the *Besidery*; the Flesh is soft and tender, and the Juice is sugary. This ripens the Middle of August.

23. PYRUS; *sativa, fructu aetivo, turbinato, sessili, saturatius rubente punctato*. Tourn. Poire de Parfum, i. e. The perfum'd Pear. This is a middle-liz'd, round Fruit, whose Skin is somewhat thick and rough, and of a deep-red Colour, spotted with brown; the Flesh is melting, but dry, and has a perfum'd Flavour. This ripens the Beginning of August.

24. PYRUS; *sativa, fructu aetivo, oblongo, magno, partim rubro, partim albido, odorato*. Tourn. Bon Chrétien d'Esté, i. e. The Summer Bonchrétien or Good Christian. This is a large oblong Fruit, whose Skin is smooth and thin; the Side next the Sun is of a beautiful red Colour, but the other Side is of a whitish-green; the Flesh is between breaking and tender, and is very full of Juice, which is of a rich perfum'd Flavour. It ripens the End of August.

25. PYRUS; *sativa, fructu aetivo, globoso, ex rubro albidoque flavescente, saccharato, odorato*. Tourn. *Salviati*. This Pear is pretty large, round and flat, very much like the *Besidery* in Shape, but not in Colour; the Stalk is very long and slender, and the Fruit is a little hollow'd both at the Eye and Stalk; the Colour is Red and Yellow next the Sun, but on the other Side is whitish; the Skin is rough; the Flesh is tender, but a little soft; the Juice

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is sugary, and perfum'd, somewhat like the *Robine*, but is not near so moist. This ripens the End of *August*.

26. *PYRUS; sativa, fructu aestivo, globoso, sessili, rufescente, odorato. Caillot-rosat, i. e. Rose-water Pear.* This is a large, round *Pear*, somewhat like the *Messire-Jean*, but rounder; the Stalk is very short, and the Fruit is hollow'd like an *Apple* where the Stalk is produc'd; the Skin is rough, and of a brown Colour; the Flesh is breaking, and the Juice is very sweet. This ripens the End of *August*.

27. *PYRUS; sativa, fructu aestivo, longo acerbitate strangulationem minitante. Tourn. Poire d'Etrangillon, i. e. The Choaky Pear.* This is seldom preserv'd in Gardens, so there needs no Description of it.

28. *PYRUS; sativa, fructu aestivo, oblongo, à ferrugineo rubente, nonnunquam maculato. Poire de Rouffelet, i. e. The Russelet Pear.* This is a large oblong *Pear*; the Skin is brown, and of a dark-red Colour next the Sun; the Flesh is tender and soft, without much Core; the Juice is agreeably perfum'd, if gather'd before it be too ripe. This produces larger Fruit on an *Espalier* than on Standard-Trees. It ripens the End of *August*.

29. *PYRUS; sativa, fructu aestivo, subrotundo, partim rubro, partim flavescente, odorato. Poire de Prince, i. e. The Prince's Pear.* This is a small, roundish *Pear*, of a bright red Colour next the Sun, but of a yellowish Colour on the opposite Side; the Flesh is between breaking and melting: The Juice is very high-flavour'd, and it is a great Bearer. This ripens the End of *August*; but will keep a Fortnight good, which is what few Summer Fruits will do.

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30. *PYRUS; sativa, fructu aestivo, globoso, viridi, in ore liquescente. Gros Mouille-bouche, i. e. The Great Mouth-water Pear.* This is a large round *Pear*, with a smooth green Skin: the Stalk is short and thick, the Flesh is melting and full of Juice, if gather'd before it be too ripe, otherwise it is apt to grow mealy. This ripens the Middle of *August*.

31. *PYRUS; sativa, fructu aestivo, rotundo, sessili, saccharato, e viridi flavescente. Bergamotte d'Estè, i. e. Summer Burgamot.* This is by some call'd the *Hambden's Burgamot*. This is a pretty large round flat *Pear*, of a greenish-yellow Colour, and hollow'd a little at both Ends like an *Apple*; the Flesh is melting, and the Juice is highly perfum'd. This ripens the Middle of *August*.

32. *PYRUS; sativa, fructu autumnali, sessili, saccharato, odorato e viridi flavescente, in ore liquescente. Tourn. Bergamotte d'Automne, i. e. The Autumn Burgamot.* This is a smaller *Pear* than the former, but is nearly of the same Shape; the Skin is of a yellowish Green but changes to a faint Red on the Side next the Sun; the Flesh is melting, and its Juice is richly perfum'd; it is a great Bearer, and ripens the Middle of *September*.

33. *PYRUS; sativa, fructu autumnali, turbinato, viridi, striis sanguineis distincta. Tourn. Bergamotte de Suisse, i. e. the Swiss Burgamot.* This *Pear* is somewhat rounder than either of the former, the Skin is tough, of a greenish Colour, strip'd with Red; the Flesh is melting and full of Juice, but it is not so richly perfum'd as either of the former. This ripens the End of *September*.

34. *PYRUS; sativa, fructu autumnali, suavissimo, in ore liquescente. Tourn. Beurre rouge, i. e. The Red Butter-*

Butter-Pear; it is call'd *l'Amboise*, and in Normandy *Isambert*; as also *Beurre gris*, i. e. The Grey Butter; and *Beurre vert*, i. e. The Green Butter-Pear. All these different Names of *Buerre's* have been occasion'd by the Difference of the Colours of the same Sort of *Pear*, which is either owing to the different Exposure where they grew, or from the Stock; those upon *Quince* Stocks being commonly of a browner Colour than those which are upon free Stocks, whence some Persons have suppos'd them to be different Fruits, though, in reality, they are the same. This is a large long Fruit, for the most part of a brown Colour; the Flesh is very melting and full of a rich sugary Juice; it ripens the End of *September*, and, when gather'd from the Tree, is one of the very best Sort of *Pears* we have.

35. PYRUS; *sativa, fructu autumnali, turbinato, sessili, flavescente & in ore liquescente*. Tourn. Le Doyenné, i. e. The Deans Pear. It is also call'd by all the following Names; *Saint Michel*, i. e. *Saint Michael*; *Beurre blanc d'Automne*, i. e. The White Autumn Butter Pear; *Poire de Neige*, i. e. the Snow Pear; *Bonne Ente*, i. e. a Good Graft; the *Carlisle* and *Valentia*. This is a large fair Fruit, in Shape somewhat like the Grey *Beurre*, but is shorter and rounder; the Skin is smooth, and, when ripe, changes to a yellowish Colour; the Flesh is melting and full of Juice, but it will not keep good a Week after it is gather'd, being very subject to grow mealy. This is a great Bearer, and ripens the End of *September*.

36. PYRUS; *sativa, fructu autumnali, longo, viridique, odorato, in ore liquescente*. Tourn. La Verte-longue, i. e. The Long Green Pear:

It is also call'd *Mouille-bouche d'Automne*, i. e. The Autumn Mouth-Water Pear. This is a long Fruit, which is very green when ripe; the Flesh is melting and very full of Juice; which (if it grows upon a dry warm Soil, and upon a free Stock) is very sugary, otherwise it is but a very indifferent *Pear*. It ripens the Beginning of *October*.

37. PYRUS; *sativa, fructu autumnali, tuberoso, sessili, saccharato, carne durâ*. Tourn. Messire-Jean blanc & gris, i. e. The White and Grey Monsieur John. These, although made two Sorts of Fruit by many Persons, are indubitably the same; the Difference of their Colour proceeding from the different Soils and Situations where they grow, or the Stocks on which they are grafted. This *Pear*, when grafted on a free Stock, and planted on a middling Soil, neither too wet, nor over dry, is one of the best *Autumn Pears* yet known; but when it is grafted on a *Quince* Stock, it is very apt to be stony; or if planted on a very dry Soil, is very apt to be small and good for little, unless the Trees are water'd in dry Seasons: which has render'd it less esteem'd by some Persons who have not consider'd the Cause of their Hardness; for when it is rightly manag'd, there is not any *Pear* in the same Season to be compar'd with it. This is a large roundish Fruit, the Skin is rough, and commonly of a brown Colour; the Flesh is breaking and very full of a rich sugar'd Juice. It ripens the Beginning of *October*, and will continue good most Part of the Month.

38. PYRUS; *sativa, fructu autumnali, globofo, ferrugineo, carne tenerâ, sapidissima*. Tourn. Muscat fleuri, i. e. The flower'd Muscat.

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It is also call'd *Muscat à longue queue d'Automne*, i. e. The Long-stalk'd Muscat of the Autumn. This is an excellent Pear, of a middling Size, and round; the Skin is of a dark red Colour; the Flesh is very tender, and of a delicate Flavour. It ripens in the Middle of October.

39. PYRUS; *sativa, fructu autumnali, globofo, ferrugineo, carne viscida*. Tourn. Poire de Vigne, i. e. The Vine Pear. This is a round Fruit, of a middling Size; the Skin is of a dark red Colour; the Flesh is very melting, and full of a clammy Juice; the Stalk is very long and slender. This Fruit should be gather'd before it be full ripe, otherwise it grows mealy, and soon rots. It ripens the Middle of October.

40. PYRUS; *sativa, fructu autumnali, oblongo, dilute rufefcente, saccharato, odoratissimo*. Tourn. Poire Rouffeline, i. e. The Rouffeline Pear. It is also call'd in Touraine, *Le Muscat à longue-queue de la fin d'Automne*, i. e. The Long-stalk'd Muscat of the End of Autumn. This is by some English Gardeners call'd the *Brute-bonne*; but that is a very different Fruit from this. It is shap'd somewhat like the *Rouffelet*, but the Skin of this is smooth, and of a greenish Yellow from the Sun, but the Side next the Sun is of a deep Red Colour, with some Spots of Grey; the Flesh is very tender and delicate; the Juice is very sweet, with an agreeable Perfume. It ripens the Beginning of October, but must not be long kept lest it rot in the Middle.

41. PYRUS; *sativa, fructu autumnali, oblongo, majori, cinereo*. Tourn. Poire Pendar, i. e. The Knave's Pear. This is very like the *Casslette* Pear, but is somewhat

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larger; the Flesh is fine and tender; the Juice is very much sugar'd. It ripens the End of October.

42. PYRUS; *sativa, fructu autumnali, turbinato, tuberoso, viridi, saccharato, in ore liquescente*. Tourn. Sucré-vert, i. e. The Green Sugar-Pear. This Pear is shap'd like the *Winter-Thorn*, but is smaller; the Skin is very smooth and green; the Flesh is very buttery; the Juice is sugar'd, and of an agreeable Flavour; but it is sometimes subject to be stony in the Middle, especially if grafted on a Quince Stock.

43. PYRUS; *sativa, fructu autumnali, tuberoso, sessili, è viridi, flavescente maculis nigris consperso, carne tenerâ saccharatâ*. Tourn. La Marquise, i. e. The Marquise's Pear. This is often of two different Shapes, according to the Nature of the Soil where they are planted; for when the Soil is dry, the Fruit very much resembles a fine Blanquet; but when the Soil is very rich and moist, it grows much larger: It is a well-shap'd Pear, flat at the Top; the Eye is small, and hollow'd; the Skin is of a greenish Yellow, a little inclining to Red on the Side next the Sun: If this Pear does not change yellow in ripening, it is seldom good; but if it does, the Flesh will be tender and delicate, very full of Juice, which is sugar'd. It ripens the End of October.

44. PYRUS; *sativa, fructu autumnali, oblongo, partim albido, partim rufefcente*. The Chat brute, i. e. The burnt Cat. It is also call'd *Pucelle de Xaintonge*, i. e. The Virgin of Xaintonge. This is a small oblong Pear, shap'd much like the *Martin Sec*, but differs from it in Colour; this being of a pale Colour on one Side, but of dark Brown on the other; the Skin is smooth;

smooth; the Flesh is tender, but dry, and if kept a short time, is apt to grow mealy. It is in eating the latter End of October.

45. PYRUS; *sativa, fructu autumnali, globoso, sessili e albido flavescente*. Le Besidery. It is so call'd from Heri, which is a Forest in Bretagne between Rennes and Nantes, where this Pear was found. This is a middle-siz'd, round Pear, of a pale Green, inclining to a yellowish Colour; the Stalk is very long and slender; the Flesh is dry, and but very indifferent for eating, but it bakes well. It ripens the End of October.

46. PYRUS; *sativa, fructu brumali, sessili, e viridi flavescente, maculato, utrinque umbilicato, in ore liquescente*. Tourn. The Crasane or Burgamot Crasane. It is also call'd *Beurre Plat*, i. e. the flat Butter Pear. This is a middle-siz'd round Pear, hollow'd at both Ends like an Apple; the Stalk is very long and crooked; the Skin is rough, of a greenish yellow Colour when ripe, cover'd over with a Russet Coat; the Flesh is extremely tender, and buttery, and is full of a rich sugar'd Juice. This is in eating the Beginning of November.

47. PYRUS; *sativa, fructu brumali, turbinato sessili, flavescente, saccharato, odorato, in ore liquescente*. Tourn. Lansac ou la Dauphine, i. e. the Lansac or Dauphine Pear. This Pear is commonly about the ordinary Size of a Burgamot, of a roundish Figure, flat towards the Head, but a little produc'd towards the Stalk; the Skin is smooth, and of a yellowish green Colour; the Flesh is yellow, tender, and melting; the Juice is sugar'd, and a little perfum'd; the Eye is very large, as is also the Flower, and the Stalk is long and strait. When this Pear is

upon a free Stock, and planted on a good Soil, it is one of the best Fruits of the Season; but when it is on a Quince Stock, or upon a very dry Soil, the Fruit will be small, stony, and worth little. It ripens the Beginning of November.

48. PYRUS; *sativa, fructu brumali, oblongo, partim intense, partim dilute ferrugineo, saccharato, odorato*. Tourn. Martin-sec, i. e. The Dry Martin. This is sometimes call'd the Dry Martin of Champagne, to distinguish it from another Dry Martin of Burgundy. This Pear is almost like the Russelet in Shape and Colour, which has occasion'd some Persons to give it the Name of Winter Russelet. It is an oblong Pear, whose Skin is of a deep Russet Colour of one Side, but the other Side is inclining to a Red; the Flesh is breaking and fine; the Juice is sugar'd, with a little Perfume, and if grafted on a free Stock, is an excellent Pear; but if it be on a Quince Stock, it is very apt to be stony. It is in eating the Middle of November; but if they were permitted to hang their full time on the Tree, will keep good two Months.

49. PYRUS; *sativa, fructu brumali, magno sessili, e cinereo flavescente*. Tourn. La Villaine d'Anjou, i. e. The Villain of Anjou. It is also call'd *Poire Tulipée*, i. e. The Tulip Pear; and *Eigarrade*, i. e. The Great Orange. This is a large round Pear, with a very long slender Stalk; the Skin is of a pale yellow Colour; the Flesh is breaking, but not very full of Juice. This is in eating the Middle of November.

50. PYRUS; *sativa, fructu brumali, flavescente, odoratissimo, pediculo crassiori*. Tourn. *Poire de Gros queue*, i. e. The large-stalk'd Pear.

This is a large roundish Pear, with a yellow Skin; the Stalk is very thick, from whence it had the Name; the Flesh is breaking, and dry, and has a very musky Flavour, but it is apt to be stony, especially if it be planted in a dry Soil, or grafted on a Quince Stock, as are most of the pertum'd Pears.

51. PYRUS; *sativa, fructu brumali, turbinato, rufescente odorato*. L' Amadote, i. e. The Amadot Pear. This is a middle-siz'd Pear, somewhat long, but flat at the Top; the Skin is generally rough, and of a Russet Colour; the Flesh is dry, and high-flavour'd, if grafted on a free Stock. The Wood of this Tree is generally thorny, and is esteem'd the best Sort of Pears for Stocks to graft the melting Pears upon, because it gives them some of its fine musky Flavour. It is in eating the End of November, but will keep good six Weeks.

52. PYRUS; *sativa, fructu brumali, globoso, dilute virente tuberoso, punctato, in ore liquescente*. Tourn. Petit-Oin, i. e. Little Lard Pear. It is also call'd *Bouvar*, and *Roufsette d' Anjou*, i. e. The Russet of Anjou; and *Amadont*; and *Marveille d' Hyver*, i. e. The Wonder of the Winter. This Pear is of the Size and Shape of the *Ambret* or *Leschasserie*, but the Skin is of a clear green Colour, and a little spotted; the Stalk is pretty long, and slender; the Eye is large, and deeply hollow'd; the Flesh is extremely fine, and melting; the Juice is much sugar'd, and has an agreeable musky Flavour. It is in eating the End of November and most Part of December, and is esteem'd one of the best Fruits in that Season.

53. PYRUS; *sativa, fructu brumali, longo, e viridi albicante, in ore liquescente*. Tourn. Louise-bonne, i. e. The Good Lewis Pear. This Pear is shap'd somewhat like the *St Germain*, or the *Autumn Vertlongue*, but is not quite so much pointed; the Stalk is very short, fleshy, and somewhat bent, the Eye and the Flower are small; the Skin is very smooth; the Colour is green, inclining to a white when ripe; the Flesh is extremely tender, and full of Juice, which is very sweet, especially when it grows upon a dry Soil, otherwise it is apt to be very large and ill-tasted. It is in eating the latter End of November and the Beginning of December.

54. PYRUS; *sativa, fructu brumali, tuberoso, e viridi flavescente, punctato saccharato*. Tourn. Poire de Colmar, i. e. The Colmar Pear. It is also call'd *Poire Manne*, The Manna Pear; and *Bergamotte Tardive*, The late Burgamot. This Pear is somewhat like a *Boncretien* in Shape, but the Head is flat; the Eye is large, and deeply hollow'd; the Middle is larger than the Head, and is slop'd toward the Stalk, which is short, large, and a little bent; the Skin is green, with a few yellowish Spots, but is sometimes a little colour'd on the Side next the Sun; the Flesh is very tender, and the Juice is greatly sugar'd. It is in eating the latter End of November, but will often keep good till January, and is esteem'd one of the best Fruits of that Season.

55. PYRUS; *sativa, fructu brumali, globoso, Citriformi, flavescense, punctato, in ore liquescente, saccharato, odoratissimo*. Tourn. L' Echasserie. It is also call'd *Verte-longue d' Hyver*, i. e. The Winter-long green

green Pear; and *Besideri Landri*, i. e. The Landry Wilding. This Pear is shap'd like a Citron; the Skin is smooth, and of a green Colour, with some Spots while it hangs on the Tree, but as it ripens, it becomes of a yellowish Colour; the Stalk is strait and long; the Eye is small, and not hollow'd; the Flesh is melting, and buttery; the Juice is sugar'd with a little Perfume. It is in eating the latter End of November, and continues good till Christmas.

56. PYRUS; *sativa, fructu brumali, longo & viridi flavescente, in ore liquecente, saccharato*. Tourn. La Virgoulé, or La Virgoleuse. It is also call'd *Bujaleuf*, and *Chambrette*; and *Poire de Glasse*, i. e. The Ice Pear, in *Gascogny*; but it is call'd *Virgoule*, from a Village of that Name in the Neighbourhood of *St. Leonard* in *Limousin*; where it was rais'd, and sent to *Paris* by the Marquis of *Chambret*. This Pear is large, long, and of a green Colour, inclining to yellow as it ripens; the Stalk is short, fleshy, and a little bent; the Eye is of a middling Size, and a little hollow'd; the Skin is very smooth, and sometimes a little colour'd towards the Sun; the Flesh is melting, and full of a rich Juice. It is in eating the latter End of November, and will continue good till January, and is esteem'd one of the best Fruits of the Season, but the Tree is very apt to produce vigorous Shoots, and the Blossoms being generally produc'd at the extreme Part of the Shoot, where they are shorten'd, the Fruit will be intirely cut away, which is the Reason it is condemn'd as a bad Bearer; but when it is grafted on a free Stock, it ought to be allow'd at least thirty Feet to spread; and if upon a

Quince Stock, it should be allow'd upwards of twenty Feet, and the Branches train'd in against the Espalier or Wall, at full Length, in an horizontal Position, as they are produc'd. Where this Tree is thus treated, it will bear very plentifully.

57. PYRUS; *sativa, spinosa, fructu globoso, sessili, ferrugineo, in ore liquecente, saccharato, odoratissimo*. Tourn. Poire d'Ambrette. This is so call'd from its musky Flavour, which resembles the Smell of the Sweet Sultan Flower, which is call'd *Ambrette* in France. This Pear is like the *Leschasserie* in Shape, but is of a Russet Colour; the Eye is larger, and more hollow'd; the Flesh is melting, and the Juice is richly sugar'd and perfum'd; the Seeds are large and black, and the Cells in which they are lodged are very large; the Wood is very thorny, especially when grafted on free Stocks. The Fruit is in eating the latter End of November, and continues good till the latter End of January, and is esteem'd a very good Fruit by most People.

58. PYRUS; *sativa, fructu brumali, magno, pyramidato, albido, in ore liquecente, saccharato, odorato*. Tourn. Epine d'Hyver, i. e. Winter Thorn Pear. This is a large fine Pear, nearly of a pyramidal Figure; the Skin is smooth, and of a pale-green Colour, inclining to yellow as it ripens; the Stalk is short and slender; the flesh is melting and buttery; the Juice is very sweet, and, in a dry Season, is highly perfum'd; but when it is planted on a moist Soil, or the Season proves wet, it is very insipid, so that it should never be planted on a strong Soil. It ripens the End of November, and will continue good two Months.

59. PYRUS; *sativa, fructu brumali, longo, e viridi flavescente, in ore liquescente. Tourn.* La Saint Germain, *i. e.* The Saint Germain Pear. It is also call'd *L' inconnue de la Fare, i. e.* The Unknown of La Fare; it being first discover'd upon the Banks of a River which is call'd by that Name, in the Parish of St. Germain. This is a large long Pear, of a yellowish green Colour when ripe; the Flesh is melting, and very full of Juice, which, in a dry Season, or if planted on a warm, dry Soil, is very sweet; but when it is planted on a moist Soil, the Juice is very apt to be harsh and austere, which renders it less esteem'd by some Persons, though in general it is greatly valu'd. This is in eating the End of November, but will many times continue good till Christmas.

60. PYRUS; *sativa, fructu brumali, tuberoso, subacido, flavescente punctato. Tourn.* Saint Augustine. This is about the Size of a middling *Virgoulé* Pear, but is somewhat shorter, and slenderer near the Stalk; the Skin is of a fine Citron Colour, spotted with Red on the Side next the Sun; the Flesh is tender, but not buttery, and is pretty full of Juice, which is often a little sharp, which to some Persons is disagreeable, but others value it on that account. This is in eating in December, and will continue good two Months.

61. PYRUS; *sativa, fructu brumali, pyramidalato, partim purpureo, punctis nigris consperso, partim flavescente. Tourn.* Bon Chrétien d'Espagne, *i. e.* The Spanish Bonchretien. This is a large Pear of a pyramidal Form; of a fine Red or Purple Colour on the Side next the Sun, and full of small black spots; the other Side is of a pale

yellow Colour; the Flesh is breaking, and when it is on a light rich Soil, and grafted on a free Stock, its Juice is very sweet. It ripens in the Beginning of December, and will continue good a Month or six Weeks. If this be grafted on a Quince Stock, it is very apt to be dry and stony.

62. PYRUS; *sativa, fructu brumali, magno, oblongo, turbinato, ferrugineo, utrinque umbilicato. Tourn.* Poire de Livre, *i. e.* The Pound Pear. It is also call'd *Gros Ratteau Gris, i. e.* The Grey Rak'd Pear; and *Poire d'Amour, i. e.* The Lovely Pear. This is a very large Pear, each of which does commonly weigh a Pound or more; the Skin is rough, and of an obscure red Colour on the Side next the Sun, but somewhat paler on the other Side; the Stalk is very short, and the Eye is greatly hollow'd. This is not fit for eating, but bakes or stews exceedingly well, and is in Season from November to Christmas.

63. PYRUS; *sativa, fructu brumali, parvo, flavescente, maculis rubris consperso. Tourn.* Bessy de Cassoy, *i. e.* The Wilding of Cassoy, a Forest in Brittany, where it was discover'd, and passes under the Name of *Roussellet d'Anjou*. It is also call'd *Petit Beurre d'Hyver, i. e.* Small Winter Butter Pear. This is a small roundish Pear, of a yellowish Colour spotted with Red; the Flesh is melting, and the Juice is very rich. It is in eating in December and January. This is a prodigious Bearer, and commonly produces its Fruit in large Clusters, provided it be not too much pruned, for it generally produces its Blossom-buds at the Extremity of its Shoots, which if shorten'd, the Fruit would be cut away. There

was

was a Tree of this Kind in the Gardens of *Camden-House* near *Kenington*, which generally produc'd a great Quantity of Fruit.

64. PYRUS; *sativa, fructu brumali, turbinato, inaequali ventre tumido, partim purpureo, partim flavescente*. Tourn. Ronville. It is also call'd *Hocrenaille*, and *Martin-Sire*, i. e. The Lord Martyn Pear. This Pear is about the Size and Shape of a large *Rouffelet*; the Eye is of a middling Size, and hollow'd a little; the Middle of the Pear is generally swell'd more on one Side than of the other, but is equally extended towards the Stalk; the Skin is very smooth and soft, and is of a lively red Colour next the Sun; but on the other Side it changes yellow as it ripens; the Flesh is breaking, and full of Juice, which is very sweet, and a little perfum'd; but if grafted on a *Quince* Stock, is very apt to be small and stony.

65. PYRUS; *sativa, fructu brumali, Citriformi, flavescente, duro, Moschato, odoratissimo*. Tourn. *Citron d'Hyver*, i. e. The Winter Citron Pear. It is also call'd the *Musk Orange Pear* in some Places. This is a pretty large Pear, in Shape and Colour very like a *Citron*, from whence it had its Name; the Flesh is hard and dry, and very subject to be stony, for which Reasons it is not valued as an eating Pear, but will bake very well. It is in Season from *December* to *March*.

66. PYRUS; *sativa, fructu brumali, oblongo, e viridi flavescente, saccharato, saporis austeri*. Tourn. *Rouffelet d'Hyver*, i. e. The Winter *Rouffelet*. This is by some suppos'd to be the same Pear as is call'd the *Dry Martin*; but it is very different from that in several Particulars: The Colour of this is

a greenish Yellow; the Stalk is long and slender, and the Flesh is buttery and melting, and generally full of Juice, which is very sweet, but the Skin is apt to contain an austere Juice; so that if it be not pared, it is apt to be disagreeable to many Persons Palates. It is in eating in *January* and *February*.

67. PYRUS; *sativa, Pictaviensis, fructu brumali, globoso, sessili, saccharato, odorato*. Tourn. *Poire Portail*, i. e. The Gate Pear. This Pear was discover'd in the Province of *Poitou*, where it was so much esteem'd, that they preferr'd it to most other Fruit; tho', in the Opinion of the most curious Judges, it does not deserve the great Character which is given to it, for it rarely happens that it proves good for eating, being generally dry, stony, and hard, unless in extraordinary Seasons, and upon a very good Soil. This must always be grafted on a free Stock, and should be planted on a light rich Soil, and in very dry Seasons the Trees should be water'd, otherwise the Fruit will be stony. It is in Season from *January* to *March*, and bakes well.

68. PYRUS; *sativa, fructu brumali, magno, globoso, flavescente, punctis rufis consperso*. Tourn. *Fin-Or d'Hyver*, i. e. The Golden End of Winter. This is a very large Pear, almost of a globular Figure; the Skin is yellow, spotted with red; the Stalk is short, and the Wood of the Tree mealy: The Flesh of this Pear is dry, and very apt to be stony, but it bakes exceeding well, and continues good from *January* till *March*.

69. PYRUS; *sativa, fructu brumali, turbinato, sessili, subacido flavescente, punctis asperioribus consperso*. Tourn. *Bergamotte Bugi*: It is also

also called *Bergamotte de Pasque*, i. e. The Easter Burgamot. It is a large Pear, almost round, but is a little produc'd in Length towards the Stalk; the Eye is flat, and the Skin is green, having many rough Protuberances like Spots dispers'd all over, but as it ripens it becomes yellowish; the Flesh is breaking, and in a good Season the Juice is sweet, but it must have a free Stock, a South-East Wall, and a good Soil, otherwise it is apt to be stony and austere. It is in Eating from *February* till *April*.

70. PYRUS; *sativa, fructu brumali, magno, pyramidato, e flavo non nihil rubente*. Tourn. Bonchrétien d'Hyver, i. e. The Winter Bonchrétien Pear. This Pear is very large and long, of a pyramidal Figure; the Skin is of a yellowish Colour, but the Side next the Sun inclines to a soft Red; the Flesh is tender and breaking, and is very full of rich sugar'd Juice. This is esteem'd in *France* one of the best Winter Pears; but in *England* it is seldom so good: tho' I am fully satisfy'd, if it were grafted on a free Stock, and planted in a good Soil, against a Wall expos'd to the South-East, and the Branches train'd at full Length, it might be render'd more acceptable than it is at present in *England*.

71. PYRUS; *sativa, fructu brumali, magno, Cydonia facie, partim flavo, partim purpureo*. Tourn. Catillac or Cadillac. This is a large Pear shap'd somewhat like a *Quince*; the Skin is for the most Part of a yellow Colour, but changes to a deep Red on the Side next the Sun: The Flesh is hard, and the Juice austere; but it is one of the best Fruits for Baking yet known, and being a plentiful Bearer, deserves a Place in every good Col-

lection of Fruit. It will be good from *Christmas* to *April*, or longer.

72. PYRUS; *sativa, fructu brumali, oblongo, flavescense, punctis rubris consperso*. La Pastourelle. This Pear is of the Size and Shape of a fine *Rouffelet*; the Stalk is short and crooked; the Skin is somewhat rough, of a yellowish Colour, spotted with Red; the Flesh is tender and buttery; and when it grows on a dry Soil, the Juice is very sweet; but on a wet Soil, or in moist Years, it is subject to have an austere Taste. This Pear is in Eating in *February* and *March*.

73. PYRUS; *sativa, fructu brumali, sessili, partim flavescense, partim purpurascense*. Tourn. La double Fleur, i. e. The Double-flowering Pear. This is so call'd, because the Flowers have a double Range of Petals or Leaves. It is a large short Pear, the Stalk is long and strait, the Skin is very smooth, and of a yellowish Colour, but the Side next the Sun is commonly of a fine red or purple Colour. This is by some esteem'd for eating, but 'tis generally too austere in this Country for that Purpose. It is the best Pear in the World for Baking or Composts. It is good from *February* to *May*.

74. PYRUS; *sativa, fructu brumali, oblongo, partim flavescense, partim purpurascense*. St. Martial. It is also call'd in some Places *Paire Angelique*, i. e. The Angelick Pear. This Pear is oblong, and has a very long Stalk; the Skin is smooth and yellowish, but on the Side next the Sun, it turns to a purplish Colour; the Flesh is tender and buttery, and the Juice is very sweet. This is in Eating in *February* and *March*.

75. PYRUS; *sativa, fructu brumali oblongo, partim albedo, partim purpureo*,

purpureo, odorato saccharato. La Poire Chaumontelle, or Bess de Chaumontelle, i. e. The Wilding of Chaumontelle. This Pear is in Shape somewhat like the Autumn Buerre, but is flatter at the Crown; the Skin is a little rough, of a pale green Colour, but turns to a purplish Colour next the Sun; the Flesh is melting, the Juice is very rich, and a little perfum'd. It is in Eating from March to June, and is esteem'd the best late Pear yet known

76. PYRUS; *sativa, fructu brumali, globoso, sessili, cinereo, maculis amplis, obscurioribus consperso.* Tourn. Carmelite. This is a middle-siz'd Pear, of a roundish Form; the Skin is of a grey Colour on one Side, but is inclining to a Red on the other, having some broad Spots of a dark Colour all over; the Flesh is commonly hard and dry, so that it is not very much esteem'd. It is in Season in March.

77. PYRUS; *sativa, fructu brumali, maximo, pyramidato, dilute virente.* The Union Pear; otherwise call'd Dr. Uvedale's St. Germain. This is a very large long Pear, of a deep green Colour, but the Side next the Sun doth sometimes change to a Red as it ripens. This is not fit for eating, but bakes very well; and being a great Bearer and a very large Fruit, deserves a Place in every good Collection. It is in Season from Christmas to April.

There are many other Sorts of Pears which are still continu'd in some old Gardens, but as those here mention'd are the best Sorts known at present, so it would be needless to enumerate a great Quantity of ordinary Fruit, since every one who intends to plant Fruits, will rather chuse those which are

the most valued, the Expence and Trouble being the same for a bad Sort of Fruit as a good one: Indeed I have inserted many more than are really worth planting, in order to please such who are fond of a great Variety; but whoever hath a Mind to make Choice of such only as are good, may easily distinguish them, by attending to the Account given of each Sort, and hereby every Person is at Liberty to please himself; for it is not every one who prefers a Buerre Pear, tho' that is generally esteem'd the very best in its proper Season: There are some who admire the Messire Jean, for the Firmness of its Flesh, which to others is a great Objection against it; so that as some esteem the Breaking, and others the Melting Pears, I have distinguish'd them by their Descriptions in such a Manner, that every one may make Choice of the Kinds of Fruits which are agreeable to their Palates; and the different Seasons in which each Kind is in eating, being exhibited (allowing a little for the Difference of Seasons, which are earlier some Years than others) it is not very difficult for a Person to make a Collection of good Pears to succeed each other throughout the Season of these Fruits, both for Eating and Baking.

Pears are propagated by budding or grafting them upon Stocks of their own Kind, which are commonly call'd Free-Stocks, or upon Quince-Stocks, or White-Thorn; upon all which these Fruits will take; but the latter sort of Stock is now seldom used, because they rarely keep Pace in their Growth, with the Fruit budded or grafted upon them; as also because the Fruit upon such Stocks are commonly drier

drier and more apt to be mealy than when they are upon *Pear-Stocks*. *Quince-Stocks* are greatly used in the Nurseries for all sorts of *Pears* which are design'd for Dwarfs or Walls, in order to check the Luxuriancy of their Growth, so that they may be kept within Compass better than upon Free-Stocks: But against the general Use of these Stocks, for all sorts of *Pears* indifferently, there are very great Objections: 1st, Because some sorts of *Pears* will not thrive upon these Stocks, but in two or three Years will decay, or at most will but just keep alive. 2dly, All the Sorts of hard breaking *Pears* are render'd stony and good for little; so that whenever any of these Sorts are injudiciously rais'd, the Fruit, altho' the Kind be ever so good, is condemn'd as good for nothing by such as are not well acquainted with it, when the Fault is intirely owing to the Stock on which it was grafted. On the contrary, all melting buttery *Pears* are greatly improv'd by being upon *Quince-Stocks*, provided they are planted on a strong Soil; but if the Ground be very dry and gravelly, no sort of *Pear* will do well upon *Quince-Stocks* in such Places.

These general Directions being given, there is no Occasion to repeat any Part of the Method in which these Stocks are rais'd, and the Fruits budded or grafted thereon; which has been already mention'd under the Article of *Nurseries*.

The Distance which these Trees should be planted either against Walls or *Espaliers*, must not be less than twenty Feet; but if they are planted twenty-five Feet, it will be better; for if they have not Room to spread on each Side, it

will be impossible to preserve them in good Order (especially those on Free-Stocks) for the more these Trees are prun'd, the more they will shoot; and, as I before said, many Sorts of *Pears* do produce their Blossom-buds first at the Extremity of the former Year's Shoots, so that when they are shorten'd, the Fruit will be cut away; and this cannot be avoided, where the Trees have not Room allow'd in their first planting.

The Manner of preparing these Trees for Planting, is the same as hath been directed for other Fruit-trees, *viz.* To cut off all the small Fibres from the Roots, and to shorten some of the longest Roots, and cut off all the bruised ones, or such as shoot downright: This being done, you should plant 'em in the Places intended at the before-mention'd Distance. The best Time to plant these Trees (if upon a middling or dry Soil) is in *October*, leaving their Heads on till Spring, which should be fasten'd to the Walls or Stakes, to prevent the Wind from disturbing their Roots; and in the beginning of *March* their Heads should be cut off, in the Manner already directed for *Peaches* and other Fruit-trees; observing also to lay some Mulch upon the Surface of the Ground about their Roots when they are planted; as hath been several times already directed for other Trees.

The first Summer after planting, the Branches should be train'd to the Wall or *Espalier* (against which they are planted) in a horizontal Position, as they are produc'd without shortening of them; and the *Michaelmas* following these Shoots should be shorten'd down to five or six Eyes, in order to obtain a sufficient Quantity of Branches to fur-

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with the lower Part of the Wall or Espalier: But when this is done, the Shoots ought not to be shorten'd unless where there is want of Branches to fill a Vacancy; for, whenever the Shoots are stopp'd, it occasions the Buds immediately below the Cut, to send forth two or more Shoots, whereby there will be a Confusion of Branches, and rarely any Fruit is produc'd with this Management.

The Distance which the Branches of *Pears* should be train'd, must be proportion'd to the Size of their Fruit: Such Sorts whose Fruit are small, may be allow'd five or six Inches; but the larger Sorts must not be less than seven or eight Inches asunder: If this be duly observ'd, and the Branches carefully train'd horizontally as they are produc'd, there will be no Occasion for so much cutting as is commonly practis'd on these Trees, which instead of checking their Growth, does, on the contrary, cause them to shoot the stronger.

It is very surprizing to read the tedious Methods which most of the Writers on Fruit-trees have directed for pruning of these Trees; for by their prolix and perplex'd Methods, one would imagine they had endeavour'd to render themselves as unintelligible as possible: And this I am sure may be affirm'd, that it is next to impossible for a Learner ever to arrive at any tolerable Skill in Pruning, by the tedious and perplex'd Directions which are publish'd by Monsieur *Quintiny*, and those who have copied from him; for these have all set out wrong in the Beginning, by allowing their Trees less than half the Distance at which they should be planted; and then have prescribed Rules to keep them within

that Compass, which is what cannot be effected, where Persons are desirous of having Plenty of Fruit.

I shall therefore only lay down a few necessary Directions for the Pruning and Managing of these Trees, which shall be done in as few Words as possible, that a Learner may the more easily understand it, and which (together with proper Observations) will be sufficient to instruct any Person in the right Management of them.

Pear-trees do generally produce their Blossom-buds first at the Extremity of the last Year's Shoots, so that if these are shorten'd, the Blossoms are cut off: But this is not all the Damage, for (as I before said) this occasions the Buds immediately below the Cut to put forth two or more Shoots, whereby the Number of Branches will be increas'd, and the Tree crowded too much with Wood; besides, those Buds which by this Management do produce Shoots, would have only produced *Cursons* and *Spurs*, upon which the Blossom-buds are produced, if the leading Branch had not been shorten'd; therefore these should never be stopped, unless to furnish Wood to fill a Vacancy.

It is not necessary to provide a new Supply of Wood in *Pear-trees*, as must be done for *Peaches*, *Nectarines*, &c. which only produce their Fruit upon young Wood; for *Pears* do produce their Fruit upon *Cursons* or *Spurs*, which are produced upon Branches which are three or four Years old, which *Cursons* do continue fruitful many Years; so that where these Trees have been skilfully managed, I have seen Branches which have been train'd horizontally, upwards of twenty Feet from the Trunk of the Tree, and

and have been fruitful their whole Length. And if we do but carefully observe the Branches of a healthful Standard Tree, which has been permitted to grow without Pruning, we shall find many that are ten or twelve Years old, or more, which are very full of these *Cursons*, upon which is annually a good Number of Fruit produced.

During the Summer Season these Trees should be often look'd over, to train in the Shoots as they are produced, regularly, to the Wall or Espalier, and to displace fore-right and luxuriant Branches as they shoot out, whereby the Fruit will be equally expos'd to the Air and Sun, which will render them more beautiful, and better tasted, than when they are shaded by the Branches; and by thus managing the Trees in Summer, they will always appear beautiful, and in Winter they will want but little Pruning.

Where *Pear-trees* are thus regularly trained, without stopping of their Shoots, and have full Room for their Branches to extend on each Side, there will never be any Occasion for disbarking of the Branches, or cutting off the Roots (as hath been directed by several Writers on Gardening) which Methods, however they may answer the Intention for the present, yet will certainly greatly injure the Trees, as must all violent Amputations, which should ever be avoided, as much as possible, on Fruit-trees; and this, I am sure, can never be wanted, where Trees have been rightly planted, and regularly trained, while young.

The Season for pruning of these Trees, is any time after the Fruits are gathered, until the Beginning of *March*, but the sooner

it is done, after the Fruit is gathered, the better, for Reasons already given for pruning of *Peach-trees*; though indeed, the deferring of these until Spring, where there are large Quantities of Trees to prune, is not so injurious to them, as to some more tender Fruits.

All the Sorts of Summer *Pears* will ripen very well, either on Standards, Dwarfs, or Espaliers; as will all the Autumn *Pears*, upon Dwarfs or Espaliers: But where a Person is very curious in his Fruit, I would always advise the Planting them against Espaliers, in which Method they take up but little Room in a Garden, and if they are well managed, do appear very beautiful, and the Fruit is larger and better tasted than those produced on Dwarfs, as hath been already observed. But all the Sorts of Winter *Pears* must be planted against East, South-East, or South-West Walls, otherwise they seldom ripen well in *England*.

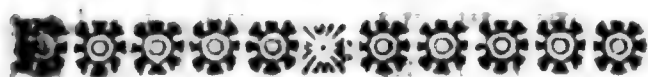
In the Gathering of *Pears* great Regard should be had to the Bud which is formed at the Bottom of the Footstalk, for the next Year's Blossoms, which by forcing off the *Pear*, before it be mature, is many times spoiled; for during the Time the Fruit is growing, there is always a Bud formed by the Side of the Footstalk, upon the same Spur for the next Year's Fruit; so that when the *Pears* are ripe, if they are gently turned upwards, the Footstalk will readily part from the Spur without injuring of the Bud.

The Season for gathering all Summer *Pears* is just as they ripen, for none of these will remain good above a Day or two after they are taken from the Tree; nor will many of the Autumn *Pears*

Pears keep good above ten Days or a Fortnight after they are gathered. But the Winter Fruits should hang as long upon the Trees as the Season will permit; for they must not receive the Frost, which will cause them to rot, and render their Juices flat and ill-tasted; but if the Weather continues mild until the Middle of *October*, it will then be a good Season for gathering them in, which must always be done in dry Weather, and when the Trees are perfectly dry.

In the doing of this you ought carefully to avoid bruising them, therefore you should have a broad, flat Basket to lay 'em in as they are gathered; and when they are carried into the Store-Room, they should be taken out singly, and each Sort laid up in a close Heap, on a dry Place, in order to sweat, where they may remain for eight or ten Days, during which Time the Windows should be open, to admit the Air, in order to carry off all the Moisture which is perspired from the Fruit; after this, the *Pears* should be taken singly, and wiped dry with a woollen Cloth, and then pack'd up in close Baskets, observing to put some sweet Wheat Straw in the Bottoms and round the Sides of the Baskets, to prevent their bruising against the Basket; you should also observe to put but one Sort of Fruit into a Basket, lest by their different Fermentations, they should rot each other; but if you have enough of one Sort to fill a Basket which holds two or three Bushels, it will be still better. After you have fill'd the Baskets, you must cover them over with Wheat Straw very close, and fasten them down,

then place these Baskets in a close Room, where they may be kept dry, and from Frost, but the less Air is let into the Room, the better the Fruit will keep: It will be very necessary to fix a Label to each Basket, denoting the Sort of Fruit therein contained, which will save the Trouble of opening them, whenever you want to know the Sorts of Fruit; besides, they ought not to be opened before their Season to be eaten, for the oftner they are opened and exposed to the Air, the worse they will keep. I don't doubt but this will be objected to by many, who imagine Fruit can't be laid too thin, for which Reason they make Shelves to dispose them singly upon, and are very fond of admitting fresh Air, whenever the Weather is mild, supposing it very necessary to preserve the Fruit; but the contrary of this is found true, by those Persons who have large Stocks of Fruit laid up in their Store-Houses in *London*, which remain closely shut up for several Months, in the Manner before related; and when these are opened, the Fruit is always found plumper and sounder than any of those Fruits which were preserved singly upon Shelves. For, as *Mr. Boyle* observes, the Air is the Cause of Putrefaction, and in order to prove this, that honourable Person put Fruits of several Kinds into Glasses where the Air was exhausted, in which Places they remained sound for several Months, but upon being expos'd to the Air, did rot in a very short Time; which plainly shews the Absurdity of the common Method now used to preserve Fruit.



QUAMOCLIT; Bindweed.

The Characters are;
The Flower consists of one Leaf, shaped like a Funnel, and divided at the Top into several Segments; from the Flower-cup rises the Pointal, which afterwards becomes a roundish Fruit, inclosing several oblong Seeds.

We have but one Species of this Plant in England, which is,

QUAMOCLIT; *foliis tenuiter incisib. pennatis.* Tourn. Quamoclit with very fine, cut, winged Leaves, commonly called in Barbados, Sweet-William.

This Plant is very common in Jamaica, Barbados, and the Caribbee Islands, where it climbs upon Bushes, Hedges, or whatever grows near it, and produces great Quantities of beautiful Scarlet Flowers, almost of the Figure of a small Convolvulus Flower, but the Tube being much larger, and the Seeds being of a different Figure from those of the *Convolvulus*, Monsieur Tournefort hath separated it from that Genus. The Seeds of this Plant are generally brought into England every Spring, from the West-Indies: They should be sown on a Hot-bed in March, and when the Plants are come up, they must be planted each into a small Pot, fill'd with light, sandy Earth, and plunged into a fresh Hot-bed, to bring the Plants forward: As the Plants advance in Heighth, so they should be removed into larger Pots, and Sticks placed down by them, for 'em to climb upon; they must also be removed

to a fresh Hot-bed, when the old one has lost its Heat; and when the Plants are too high to be contain'd under Frames, they should be removed into the Stove, where, if they are plunged into a moderate Hot-bed of Tanners Bark, and not too much drawn, they will produce a great Quantity of beautiful Scarlet Flowers, and ripen their Seeds very well; but if they are expos'd to the open Air, they seldom flower in this Country. This Plant continues but one Year, the Root perishing soon after the Seeds are ripe.

QUERCUS; The Oak-Tree.

The Characters are;
It hath Male Flowers (or Katkins) which consist of a great Number of small slender Threads; the Embryo's, which are produc'd at remote Distances from these, on the same Tree, do afterwards become Acorns, which are produc'd in hard, scaly Cups: To which may be added, the Leaves are sinuated.

The Species are;

1. QUERCUS; *latifolia.* Park. Theat. The common Oak.
2. QUERCUS; *latifolia, mas, que brevi pediculo est.* C. B. P. Oak with the Acorns on short Footstalks.
3. QUERCUS; *latifolia, foliis ex albo eleganter variegatis.* The strip'd Oak.
4. QUERCUS; *latifolia, perpetuo virens.* C. B. P. The broad-leav'd ever-green Oak.
5. QUERCUS; *calice echinato, glande majore.* C. B. P. Oak with large Acorns having prickly Cups.
6. QUERCUS; *humilis, Gallis binis, ternis aut pluribus simul junctis.* C. B. P. Dwarf Oak, vulgo.
7. QUERCUS; *Virginiana, rubris venis muricata.* Pluk. Phyt. The Virginian Scarlet Oak.

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8. QUERCUS; *Castanea foliis, procera Arbor, Virginiana. Pluk. Phyt.* Virginian Oak, with Chesnut Leaves.

9. QUERCUS; *alba, Virginiana. Park. Theat.* The white or iron Oak of Virginia.

10. QUERCUS; *Virginiana, salicis longiore folio, fructu minimo. Pluk. Amalth.* Virginian Willow-leav'd Oak.

11. QUERCUS; *pumilis, Castanea folio Virginienfis. Pluk. Almag.* The Chinquapin Oak.

The two first Sorts are common in *England*, but the Sort whose Acorns grow on short Footstalks, is less frequent than the other. I have seen several Trees of that Kind near *Dulwich* in *Surry*, but whether the Acorns of this Sort will produce Trees of the same Kind, I cannot determine. The Sort with strip'd Leaves was obtain'd by Accident, but may be propagated by budding or grafting it upon the common Oak; the Leaves of this are generally variegated with white in a most beautiful Manner, and the Tree is esteem'd a great Curiosity by such as delight in variegated Plants.

The fourth Kind deserves a Place in Wilderesses, amongst other Sorts of ever-green Trees, where it will make a beautiful Appearance, but the Timber is not near so good as that of the common Sort.

The fifth Kind was originally brought into *England* from *Spain*, but is hardy enough to endure the Cold of our Winters very well: This is preserved by such as are curious in collecting the several Kinds of Trees.

The other Sorts have been brought from *America*, (where there are a Variety of different Oaks) and are very hardy: Many of them are of

quicker Growth than the common Sort, and although their Timber is not so good, yet they deserve a Place in large Wilderesses, where they will afford an agreeable Variety. As these Trees are propagated from Acorns, so those Persons who are desirous to cultivate 'em, should endeavour to obtain the Acorns fresh from *America*, which must be put up in Sand, to preserve them during their Passage; and when they arrive in *England*, they should be put into the Ground immediately, otherwise they do seldom grow.

Besides the Sorts of Oaks here-mentioned, there are divers others which are produced in several Parts of *Europe*, and differ in the Shape and Size of their Leaves and Fruit; but these are not to be found in any of our *English* Plantations at present; though, when I was at *Leyden* in *Holland*, in the Year 1727, I saw above forty Sorts of Oaks, in the curious Garden of the learned Dr. *Boerhaave*, near *Leyden*, most of which were in a very prosperous Condition, and had endured the Cold of that Climate two or three Years, in the open Air; so that if these were procured in *England*, they would be equally as hardy as the common Sort, and add to the Variety of our Plantations.

All the Sorts of Oaks are propagated from Acorns, which should be sown as soon as possible, when they are ripe; for if they are kept long out of the Ground, they seldom grow.

The Manner of sowing these Acorns (if designed for a small Plantation, to be removed) is, to prepare a Bed or two of fresh Earth, neither too strong and heavy, nor too light and dry; in these Beds you should place the Acorns about

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two Inches asunder, covering them about two Inches thick, with the same fresh Earth, observing to leave none of them uncover'd to entice the Vermin, which may, in a short Time, destroy all the Seeds.

In the Spring, when the Plants begin to appear, you must carefully clear them from Weeds, and if the Season proves dry, you should refresh them now and then with a little Water, which will greatly promote their Growth. In these Beds the Plants should remain until the following Spring, (observing constantly to keep them clear from Weeds) at which Time you should prepare a Spot of good fresh Earth, (in Size proportionable to the Quantity of Plants) which should be well trenched and levelled; then toward the Middle or latter End of *March*, you should carefully take up the Plants, so as not to injure their Roots, and plant them out in Rows three Feet asunder, and eighteen Inches Distance Plant from Plant, observing never to suffer the Plants to abide long out of the Ground, because their Roots would dry and endanger the Growth of the Plants.

When they are planted, you should lay a little Mulch upon the Surface of the Ground, near their Roots, to prevent the Earth from drying too fast; and if the Season be very dry, you should give them a little Water to settle the Earth to their Roots.

If these Things are carefully observed, there will not so many of the Plants miscarry, as do generally in the common Method: For few Persons consider either the proper Method or Season for removing these Trees; most People imagining it may be perform'd with equal Success, any time after the Leaves begin to decay: but this is

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a very wrong Opinion; for, from several Experiments which I have made, in transplanting of these Trees in various Seasons, I find they always succeed best when they are transplanted just before they begin to shoot; at which Season there will very few fail, provided they are removed with Care.

When the Plants have taken Root in this Nursery, they will require little more Care than to keep 'em clear from Weeds, and dig the Ground between the Rows every Spring; in doing of which you should cut off such Roots as extend very far from the Trunk of the Trees, which will render them better for transplanting again: You should also prune off such Side-Branched as do extend themselves very far, and would retard the upright Shoot, but you should by no means cut off all the small lateral Branches, some of which are absolutely necessary to be left on, to detain the Sap for the Augmentation of the Trunk; for I have often observed, where Trees have been thus closely pruned, that their Heads have over-grown their Bodies, so that they have bent downward, and become crooked.

When these Trees have remain'd in the Nursery three or four Years, they will then be large enough to transplant to the Places where they are to remain; for it is not proper to let them grow very large before they are planted out, because these are very hazardous Trees to remove when old, or after they have taken deep Root.

The Season for this Work is (as I said) just before they begin to shoot in the Spring, at which Time, if they are carefully taken up, there will be little Danger of their succeeding. When they are planted, the

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the Surface of the Ground should be mulched about their Roots, to prevent its drying too fast; and if the Season is very dry, they should be watered, to settle the Earth to their Roots, which may be repeated two or three times in very dry Weather, but you must carefully avoid giving them too much Water, which is very injurious to these Trees, when newly removed.

You should also stake them, to prevent their being shaken and disturb'd by the Winds, which would retard their Rooting. In transplanting of these Trees, you should by no means cut their Heads, which is too much practis'd; all that should be done, must be only to cut off any bruised, or ill-placed Branches, which should be taken off close to the Place where they are produced; but there can be no greater Injury done to these Trees, than to shorten their Shoots; for when the leading Bud (which is absolutely necessary to draw and attract the Nourishment) is taken off, the Branch often decays entirely, or at least down to the next vigorous Bud.

The Trees thus rais'd and manag'd, will (if planted in a proper Soil) grow to a considerable Magnitude, and are very proper for a Wilderness in large Gardens, or to plant in Clumps in Parks, &c. but if they are design'd for Timber, it is by much the better Method to sow the Acorns in the Places where they are to remain; in order to which, you should provide your self in Autumn with a sufficient Quantity of Acorns, which should be always taken from strait, upright, vigorous growing Trees: these should be gathered from under the Trees as soon as may be, after they are fallen, and, if possible, in a dry

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Time, laying them thin in some open Room to dry; after which they may be put up in dry Sand, and preserved in a dry Place until the End of *January*, when you should prepare the Ground for planting them.

The Manner of doing this, when the Plantation is very large, should be, to dig square Spots about two Feet over, at every ten Feet Distance, into each of which you should put four or five sound Acorns, about two Inches deep, being careful to cover them all over, lest by leaving any of them above Ground, the Vermin should be enticed, and thereby the greatest Part of the Plantation should be destroy'd. When the whole Plantation is finished, it will be of great Service to stick into each Plot a few small Bushes, which will protect the Plants when they appear above Ground, from Cattle, and also from the Injury of Weather; and when the Plants are come up, the Weeds should be carefully clean'd away from them during the growing Season, which will greatly promote their Growth; and the following Spring, just before the Plants begin to shoot, you should take them all up, except two of the most thriving out of each Plot (which may be transplanted into another Place, if you have occasion for them); but in doing of this, you should be very careful not to disturb the Roots of the remaining Plants; and it will be very necessary to renew the Bushes about them where they are lost, to protect them from Cattle; and the following Summer they should be kept clear from Weeds.

In this manner they may remain three or four Years, (observing every Spring to dig and loosen the Earth about their Roots, which will

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be of great Service to them) by which time you will easily judge which of the two Plants left in each Plot, is likely to make the best Tree, so that the other should now be taken away, being very careful how you dig near the remaining Plants, lest you should injure their Roots, and if at this time you find any of them with very crooked unlighty Stems, you may cut them down near the Surface of the Ground, and if their Roots are strong, they will send forth strait vigorous Shoots the following Summer, and make kindly handsome Plants.

When these Plants are advanced out of the Reach of Cattle, they will require but little more Care, except to prune off any strong lateral Branches, where they are produced, in order to strengthen the leading Shoot; but you should by no means be too busy in pruning these Trees, which will greatly retard their Growth. The Expence of such Plantations is but small, especially where Labour is cheap, and the Profits which must arise from them, to the Successors of those who are so beneficent to their Posterity, as to lay out a small Share of their Fortune this Way, will be very great; but as this has been fully treated of by Mr. Evelyn, so I shall not repeat it in this Place, but refer the Curious to his valuable Treatise of *Forest-Trees*, where they will find enough said to encourage all Gentlemen of Estates, to lay out some of their present Fortune, to enrich their Families.

QUICK, delights in a Ground that is more dry than wet, (for watery Places it abhors.) Plant *Quick* in the following Manner:

Let the first Rows of Sets be plac'd in a Trench of about half a Foot deep, even with the Top of

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the Ditch, in somewhat a sloping or inclining Posture; then having rais'd the Bank near a Foot upon them, plant another Row so as their Tops may just peep out over the Middle of the Spaces of the first Row: These cover again to the Height and Thickness of the other, and place a third Rank opposite to the first, and then finish the Bank to its intended Height.

The Distances of the Plants should not be above one Foot; and the Season to do the Work in, may be from the Beginning of *February* till the End of *March*, or else in *September* to the Beginning of *December*.

When this is finish'd, you must guard both the Top of the Bank, and the utmost Verge of the Ditch with a sufficient dry Hedge interwoven from Stake to Stake into the Earth (which commonly they do on the Bank) to secure the *Quick* from the Spoil of Cattle.

You must also be careful to repair such as decay, the following Spring, by supplying the dead, and trimming the rest; and after three Years Growth, intermix some Timber-trees amongst them, such as *Oak*, *Ash*, *Beech*, *Maple*, *Fruit* or the like; which being drawn young out of the Nurseries may be very easily inserted.

Some, indeed, object against scattering these Masts and Keys among Fences, which being grown, overtop the Hedge that grows under it, and may prejudice it with their Shade and Drip: But this may be prevented by planting *Hollies* (which are Proof against these Impediments) in the Line or Trench where you would raise Standards, as far as they usually spread in many Years, and which, if plac'd at good Distances,

Distances, how close soever to the Stem, would (besides their stout Defence) prove a great Decoration to large and ample Inclosures.

In *February* or *October*, with a sharp Hand-bill, cut away all superfluous Sprays and Stragglers; then search out the principal Stems, and with a keen and light Hatchet cut them slant-wise close to the Ground hardly three-quarters through, or rather so far only as till you can make them comply handsomely, lest you rift the Stem; and so lay it from you sloping as you go, folding in the lesser Branches which spring from them; and ever within five or six Feet Distance, where you find an upright Set, (cutting off only the Top to the Height of your intended Hedge) let it stand as a Stake, to fortify your Work, and to receive the twining of those Branches about it.

Lastly, at the Top, (which should be about five Feet above Ground) take the longest, most slender and flexible Twigs which you reserv'd, and (being cut as the former, where Need requires) bind in the Extremities of all the rest; and thus your Work is finish'd.

This being done very close and thick, makes an impregnable Hedge in few Years, for it may be repeated as you see Occasion; and what you so cut away, will help to make your dry Hedges for your young Plantations, or will be useful for the Oven, and make good *Bavin*, especially the extravagant Side-branches, which will spring upright, till the newly-wounded are healed.

There are some who would have no Stakes cut from the Trees, save here and there one, so as to leave half the Head naked, and the other standing, but the over-hanging

Boughs will kill what is under them and ruin the Tree, so pernicious is this Half-topping.

There is nothing more prejudicial to under-growing young Trees than when newly trimmed and pruned, to have their (as yet raw) Wounds poison'd with continual dripping.

Thomas Franklin, Esq; has given the following Account of his Method of planting *Quick*.

He first set out the Ground for Ditches and *Quick* ten Feet in Breadth; he subdivided that, by marking out two Feet and a half on each Side (more or less at Pleasure) for the Ditches, leaving five in the Middle between them; then digging up two Feet in the Midst of that five Feet, he planted the Sets in; which although it required more Labour and Charge, he says, he soon found it repaid the Cost: This done, he began to dig the Fosses, and to set up one Row of Turfs on the Outside of the said five Feet; namely, one Row on each Side thereof, the green Side outmost, a little reclining, so as the Grass might grow.

After this, returning to the Place he began at, he order'd one of the Men to dig a Spit of the under Turf-mould, and lay it between the Turfs placed edgewise as before describ'd, upon the two Feet which was purposely dug in the Middle, and prepar'd for the Sets, which the Planter sets with two *Quicks* upon the Surface of the Earth almost upright, whilst another Workman laid the Mould forwards about twelve Inches, and then set two more, and so continued.

This being finish'd, he order'd another Row of Turfs to be placed on each Side upon the Top of the former, and fill'd the Vacancy between

between the Sets and Turfs as high as their Tops, always leaving the Middle, where the Sets were planted, hollow, and somewhat lower than the Sides of the Banks by eight or ten Inches, that the Rain might descend to their Roots; which is of great Advantage to their Growth, and by far better than by the old Ways, where the Banks are too much sloping, and the Roots of the Set are seldom wetted even in a moist Season the Summer following: But if it prove dry, many of the Sets, especially the late planted, will perish; and even few of those that had been planted in the latter End of *April*, (the Summer happening to be somewhat dry) escap'd.

The Planting being thus advanc'd, the next Care is *Fencing*; by setting a Hedge of about twenty Inches high upon the Top of the Bank on each Side thereof, leaning a little outwards from the Sets, which will protect them as well (if not better) than a Hedge of three Feet, standing on the Surface of the Ground, so as no Cattle can approach the dead Head to prejudice it, unless they set their Feet in the Ditch it self, which will be at least a Foot deep; and from the Bottom of the Foss to the Top of the Hedge, about four Feet and a half, which they can hardly reach over to crop the *Quick*, as they might in the old Way; and besides, such an Hedge will endure a Year longer.

He says, he had an Hedge which had stood five Years. And tho' nine or ten Feet were sufficient for both Ditches and Banks, yet where the Ground is but indifferent, it is better Husbandry to take twelve Feet, which will allow of a Bank at least six Feet broad, and gives more Scope to place the dead Hedges farther from the Sets, and the

Ditches being shallow, will, in two Years time, graze.

As to the Objection, that taking twelve Feet wastes too much Ground, he affirms, That if twelve Feet in Breadth be taken for a Ditch and Bank, there will no more Ground be wasted than by the common Way; for in that a *Quick* is rarely set but there is nine Feet between the dead Hedges, which is intirely lost all the Time of fencing; whereas with double Ditches there remain at least eighteen Inches on each Side where the Turfs were set on edge, that bear more Grass than when it lay on the flat.

But admitting it did totally lay waste three Feet of Ground, the Damage were very inconsiderable, since forty Perch in Length, two hundred and twenty Yards, which makes Perches 7, 25'', 9', or 7 Pole $\frac{1}{2}$; which, at 13s. and 4d. the Acre, amounts not to 7d $\frac{1}{2}$ per Annum.

Now, that this is not only the best but cheapest Way of *Quick-setting*, will appear by comparing the Charge of both.

In the usual Way, the Charge of a three Foot Ditch is four Pence per Pole, the Owner providing Sets; if the Workman finds them, he will have for making the said Ditch, and setting them, eight Pence per Pole, and for Hedging, two Pence, that is, for both Sides four Pence the Pole; which renders the Charge of Hedging, Ditching, and Sets, twelve Pence the Pole, that is, for forty Rod in Length, forty Shillings.

Then one Load of Wood out of the Copse costs (with Carriage, tho' but two or three Miles Distance) ten Shillings, which will seldom hedge above eight Pole (single Hedge);

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Hedge); but allowing to do ten, to fence forty Pole, there must be at least eight Load of Wood, which costs four Pounds, making the whole Expence for Ditching, Fencing and Setting forty Pole, to be six Pounds, reckoning with the least; for scarce any will undertake to do it for less than three Shillings and six Pence *per* Pole, and then the forty Pole costs seven Pounds.

Whereas with double Ditches, both of them *Setting* and *Sets*, will be done for eight Pence the Pole, and the Husbandman get as good Wages as with the single Ditch, (for though the Labour about them is more, yet the making the Table is sav'd) which costs one Pound six Shillings and eight Pence; and the Hedges being low, they will make better Wages at Hedging for a Penny a Pole, than at two Pence for common Hedges; which comes to six Shillings and eight Pence; for hedging forty Pole on both Sides: Thus, one Load of Wood will fence thirty Pole at least, and forty hedged with two Thirds of Wood less than in the other Way, and cost but one Pound six Shillings and eight Pence, which makes the other whole Charge of Sets, Ditching, Fencing, and Wood but three Pounds.

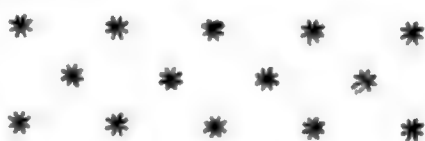
QUICK BEAM; *vide* Sorbus Sylvestris.

QUINCE TREE; *vide* Cydonia.

QUINCUNX ORDER; is a Plantation of Trees, dispos'd originally in a Square, consisting of five Trees, one at each Corner, and a fifth in the Middle; which Disposition repeated again and again, forms a regular Grove, Wood or Wilderness: and when view'd by an Angle of the Square or Parallelogram, presents equal or parallel Alleys.

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Trees planted in *Quincunx*, are such as are planted in the following Form:



QUINQUEFOLIUM; Cinquefoil.

There are many *Species* of this Plant which are preserv'd in *Botanick Gardens*, for Variety, (some of which grow wild in divers Parts of *England*) but as they are never propagated either for Use or Beauty, so I shall not trouble the Reader with an Enumeration of their several Names.



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RADISH; *vide* Raphanus.

RADISH, HORSE; *vide* Cochlearia.

RAMPIONS; *vide* Campanula radice, esculente.

RANUNCULUS; Crowfoot.

The Characters are;

The Flower consists of several Leaves, which are placed in a circular Order, and expand in Form of a Rose; having, for the most part, a many-leav'd Empalement or Flower-cup; out of the Middle of the Flower rises the Pointal, which afterwards becomes a Fruit, either round, cylindrical, or spiked; to the Axis of which, as a Placenta, adhere many Seeds, for the most part naked.

The Species are;

1. RANUNCULUS; *hortensis, erectus, flore pleno*. C. B. P. Common yellow Crowfoot, with a double Flower.

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2. RANUN-

2. RANUNCULUS; *repens, flore pleno*. J. B. Common creeping Crowfoot with a double Flower.

3. RANUNCULUS; *Montanus, aconiti folio, albus, flore minore*. C. B. P. Mountain Crowfoot, with a white Flower.

4. RANUNCULUS; *folio aconiti, flore albo, multipli i.* C. B. P. Crowfoot with a Monk's-hood Leaf and a double white Flower, commonly called, The Fair Maid of France.

5. RANUNCULUS; *bulbosus, flore pleno*. C. B. P. Common bulbous-rooted Crowfoot, with a double Flower.

6. RANUNCULUS; *Constantinopolitanus, flore sanguineo, pleno*. J. B. Common Ranunculus, with a double bloody Flower.

7. RANUNCULUS; *asphodeli, radice prolifer, miniatus*. C. B. P. Ranunculus with an Asphodel Root, and Childing Carmine Flowers, commonly called, Turks Turban.

8. RANUNCULUS; *Asiaticus polyclones, sive grumosa radice secundus*. J. B. Asiatick Ranunculus with many Heads and a grumose Root, commonly called Sphericus.

9. RANUNCULUS; *Asphodeli radice, flore sanguineo maximo*. H. R. Par. Asphodel-rooted Ranunculus, with a very large red Flower, commonly called The Monster.

10. RANUNCULUS; *Asphodeli radice, flore subphœnicio rubente*. C. B. P. Asphodel-rooted Ranunculus, with purplish-red Flowers, commonly called Marvelia.

11. RANUNCULUS; *Asphodeli radice, flore luteo variegato*. H. R. Par. Asphodel-rooted Ranunculus, with a Yellow variegated Flower.

12. RANUNCULUS; *Alepus, grumosa radice, flore lineis rubris & luteis striato*. H. R. Par. Grumose-rooted Crowfoot, with a Flower strip'd with red and yellow Lines,

commonly called Ranunculus of Aleppo.

13. RANUNCULUS; *Asphodeli radice, flore flavo, venis rubris distincto*; Bosvell dictus. H. R. Par. Crowfoot with an Asphodel Root, and yellow Flower with red Veins, commonly called Bosvel.

14. RANUNCULUS; *Alepus grumosa radice, flore miniato, per oras luteo*. H. R. Par. Aleppo Crowfoot with a grumose Root and a Carmine Flower bordered with Yellow.

15. RANUNCULUS; *flore pleno, flavescente, & rubris lineis elegantissime variegato*. H. R. Par. Crowfoot with a double yellow Flower, curiously strip'd with red Lines, commonly called Aurora.

16. RANUNCULUS; *Asphodeli radice, flore pleno, albo, parvo, rubris striis distincto*. H. R. Monsp. Crowfoot with an Asphodel Root, and a small double white Flower strip'd with red.

17. RANUNCULUS; *Asphodeli radice, flore pleno, magno, lacteo, superius lituris rubris eleganter picto*. Boerb. Ind. Crowfoot with an Asphodel Root, and a large double white Flower, mark'd above with red Spots, commonly called, The Seraphick.

These are most of them old Flowers, which have been long cultivated in the English Gardens. The five first-mention'd Sorts are very hardy Plants, and will thrive extremely well in shady Borders; these require no other Culture, but to take up their Roots every other Year, when their Leaves decay, and part 'em, planting out the Off-sets in other Borders, lest by permitting them to grow too large, they rot each other. The creeping Sort will require to be often transplanted, otherwise it will spread over

over every thing that grows near it. These do all produce handsome double Flowers, which continue long in Beauty, and afford an agreeable Variety, and being hardy, are worthy of a Place in every good Garden.

The other Sorts were originally brought from *Turkey*, and were formerly in great Esteem in *England*, but of late Years there have been introduced many other Sorts of a different Kind, from *Persia*, amongst which are many with semi-double Flowers, which produce Seeds, from which there are such prodigious Varieties of new Flowers annually obtain'd, which are so large, and of such Variety of beautiful Colours, as to exceed all other Flowers of that Season, and even vie with the most beautiful Carnations: These are, many of them, finely scented, and the Roots, when strong, do generally produce eight, ten or twelve Flowers upon each, which succeeding each other, do continue in Beauty a full Month, or longer, according to the Heat of the Season, or the Care taken to defend them from the Injuries of the Weather; all which excellent Qualities have render'd them so valuable, that the old Sorts here-named are almost disregarded, except in some old Gardens; but however, as they are still preserved by some Persons, so I shall briefly set down their Management, before I proceed to that of the new Kinds, which must be treated in a different Manner from these.

All these very double Flowers do never produce Seeds, so that they are only multiplied by Offsets from their Roots, which they generally produce in good Plenty, if planted in a good Soil, and duly

attended in Winter. The Season for planting their Roots is any time in *October*, for if they are planted sooner, they are apt to come up in a short Time, and grow pretty rank before Winter, whereby they will be in greater Danger of suffering by Frost; and if they are planted much later, they will be in Danger of perishing under-ground; so that if you keep them out of the Ground any longer than the Beginning of *November*, it will be the better Way to defer the Planting of them 'till the latter End of *January*, or the Beginning of *February*, after the great Frosts are past.

The Beds in which these Roots are planted, should be made with fresh, light, sandy Earth, at least a Foot deep: The best Soil for these Roots may be compos'd in the following Manner, *viz.* Take a Quantity of fresh Earth from a rich upland Pasture, about six Inches deep, together with the Green-sward; this should be laid in a Heap to rot for twelve Months before it is used, observing to turn it over very often, to sweeten it, and break the Clods; to this you should add a proportionable Quantity of Sea or Drift Sand, according as the Earth is lighter or stiffer; if it be light and inclining to a Sand, one Load of Sand will be sufficient for four Loads of Earth; but if the Earth is strong and heavy, the Sand should be mix'd in equal Quantity therewith; but you should often turn it over, in order to unite their Parts well together, before it is put into the Beds.

The Depth which this should be laid in the Beds (as was before said) must be about a Foot, this should be below the Surface, in Proportion to the Dryness or Moisture of the

the Place where they are situated; which in dry Ground should be eight Inches below the Surface, and the Beds rais'd four Inches above; but in a moist Place, they should be six Inches below, and six above the Ground; and in this Case it will be very proper to lay some Rubbish and Stones in the Bottom of each Bed, to drain off the Moisture. This Earth I would by no means have screened very fine, but only in turning it over each Time, you should be careful to break the Clods, and throw out all large Stones, which will be sufficient, for if it is made very fine, when the great Rains in Winter come on, it will cause the Earth to bind into one solid Lump, whereby the Moisture will be detain'd, and the Roots not being able to extend their tender Fibres, will rot: Of this I have seen many Examples, but one particularly to my Cost; when I had procured a fine Parcel of these Roots from abroad, and being desirous of having them thrive very well, I took great Pains to screen the Earth of my Beds very fine, which I laid near two Feet deep, and planted a good Part of my Roots therein; but the Season advancing, and having a great deal of other Business upon my Hands, I did not screen the Earth of all my Beds, but planted some of them without doing any thing more than raking them; and the Success was, that the Roots in those Beds which were screened, did, great Part of them, entirely rot, and the remaining Part were so weak, as not to produce any good Flowers; whereas those which were planted in the Beds which were not screened, did thrive and flower very well, and scarce any of the Roots fail'd, tho'

the Earth of all the Beds was the same, and were in the same Situation, both with regard to Wind and Sun; so that the Damage which those Roots sustain'd, was owing entirely to the Fineness of the Earth; and this I have several times since observed in other Gardens.

The Beds being thus prepared, should lie a Fortnight to settle, before the Roots are planted, that there may be no Danger of the Earth settling unequally after they are planted, which would prejudice the Roots, by having hollow Places in some Parts of the Bed, to which the Water would run and lodge, and so rot the Roots in such Places. Then having levelled the Earth, laying the Surface a little rounding, you should mark out the Rows by a Line, at about four Inches Distance each Way, so that the Roots may be planted every Way in strait Lines; then you should open the Earth with your Fingers, at each Cross, where the Roots are to be planted, about two Inches deep, placing the Roots exactly in the Middle, with their Crowns upright, then with the Head of a Rake you should draw the Earth upon the Surface of the Bed level, whereby the Top of the Roots will be about an Inch covered with Earth, which will be sufficient at first: This Work should be done in dry Weather, because the Earth will then work better than if it were wet; but the sooner after Planting there happens to be Rain, the better it will be for the Roots; for if it should prove dry Weather long after, and the Earth of the Beds be very dry, the Roots will be subject to mould and decay; therefore in such a Case it will be proper to give a little Water

ter to the Beds, if there should no Rain happen in a Fortnight's Time, which is very rare at that Season of the Year, so that they will seldom be in Danger of suffering that Way.

When the Roots are thus planted, there will no more be required until toward the Middle of *November*, by which Time they will begin to heave the Ground, and their Buds appear, when you should lay a little of the same fresh Earth, of which the Beds were composed, about an Inch thick all over the Beds, which will greatly defend the Crown of the Root from Frost: And when you perceive the Buds to break through this second Covering, if it should prove a very hard Frost, it will be very proper to arch the Beds over with Hoops, and cover them with Mats, especially in the Spring, when the Flower-buds will begin to appear; for if they are exposed to too much Frost or blighting Winds at that Season, their Flowers do seldom open fairly, and many times the Roots are destroyed: But this happens more frequently to the *Persian* Kinds, which are tenderer, than to these Sorts, which are pretty hardy; for which Reason these are often planted in open Borders, intermix'd with other Flowers, though in very hard Winters these are apt to suffer, where there is not Care taken to guard off the Frost.

In the Beginning of *March* the Flower-stems will begin to rise, at which Time you should carefully clear the Beds from Weeds, and stir the Earth with your Fingers between the Roots, being very careful not to injure them; this will not only make the Beds appear handsome, but also greatly

strengthen their Flowers. When the Flowers are past, and the Leaves are withered, you should take up the Roots, and carefully clear 'em from the Earth, then spread them upon a Mat to dry, in a shady Place, after which they may be put up in Bags or Boxes in a dry Room, until the *October* following, which is the Season for Planting them again.

Thus having directed how these Sorts are to be cultivated, I shall proceed to treat of the *Persian* Kinds, in which I shall only mention in what Particulars these are to be treated different from those already mentioned.

These Flowers are not only propagated by Off-sets from the old Roots, as the former, but are also multiplied by Seeds, which the semi-double Kinds do produce in Plenty. Therefore whoever is desirous to have these in Perfection, should annually sow their Seeds, from which new Varieties will be every Year produced; but in order hereto, you should be careful in saving the Seed, or in procuring it from such Persons as understand how to save it; that is, who will be careful not to leave any Flowers for Seeds, but such as have three or four Rows of Petals at least, and are well coloured; for since these Flowers do increase so plentifully, it is not worth the Trouble to sow any indifferent Seeds, because there can be but little Hopes of obtaining any good Flowers from such Seeds.

Being prepared with Seeds, about the Middle of *August*, which is the proper Season for sowing of them, you should get some large Pots, flat Seed-pans or Boxes (of either as many as you have Seeds to sow) these should be filled with
light,

light, sandy, rich Earth, levelling the Surface very even; then sow the Seeds thereon pretty thick, and cover it about a Quarter of an Inch thick with the same light Earth; after which you should remove these Pots into a shady Situation, where they may have the Morning Sun until ten of the Clock; and if the Season should prove dry, you must often refresh 'em with Water, being very careful in doing of this, so as not to wash the Seeds out of the Ground. In this Situation the Pots should remain until the Beginning of *October*, by which Time the Plants will begin to come up (though sometimes the Seeds will remain in the Earth until *November*, before the Plants appear) when you should remove the Pots into a more open Exposure, where they may have full Sun, which at that Time is necessary to exhale the Moisture of the Earth; but toward the Middle of *November*, when you are apprehensive of Frost, the Pots should be removed under a common Hot-bed Frame, where they may be covered with the Glasses in the Night-time and in bad Weather, but in the Day, when the Weather is mild, they should be entirely opened, otherwise the Plants will draw up too weak: the only Danger they are in, is from violent Rains and Frosts, the first often rotting the tender Plants, and the Frost will often turn them out of the Ground, therefore they should be carefully guarded against both of these.

In the Spring, as the Season grows warm, so these Pots should be expos'd to the open Air, placing them at first near the Shelter of a Hedge, to protect them from the cold Winds; but towards the

latter End of *March*, or the Beginning of *April*, they should be remov'd again into a more shady Situation, according to the Warmth of the Season; and if it should prove dry, they must be sometimes refresh'd with Water; but you should be careful not to give it to 'em in great Quantities, which is very apt to rot these tender Roots: and in the Middle or latter End of *April*, they should be plac'd where they may have only the Morning Sun: in which Place they may remain till their Leaves decay: when they may be taken out of the Earth, and the Roots dry'd in a shady Place; after which they may be put up in Bags, and preserv'd in a dry Place until the *October* following; when they must be planted in the Manner before directed for the old Roots.

The Spring following, these Roots will flower; at which time you should carefully mark such of them as are worthy to be preserv'd: and the single or bad-colour'd Flowers may be pull'd up and thrown away, which is the surest Method of removing them from the good Sorts; for if they are permitted to remain together until their Leaves decay, there may be some Off-sets of the bad Sorts mix'd with the good Flowers. You should not suffer those Flowers which you intend to blow fine the succeeding Year, to bear Seeds, but cut off the Flowers when they begin to decay; for those Roots which have produc'd Seeds, do seldom flower well afterwards, nor will the principal old Root, which has flower'd strong, ever blow so fair as will the Off-sets, which is what should be principally observ'd, when a Person purchases any of these Roots; and a great Part of the

the Complaints made by those who have bought these Roots at a dear Rate, is principally owing to this; for the Persons who sold them being appriz'd of this Matter, have parted with their old Roots to their Purchasers, and reserv'd the Off-sets for their own Use; which old Roots have often so much degenerated from what they were the preceeding Year, as to cause a Suspicion, whether the Persons they were purchas'd from had not chang'd the Roots; and this Degeneracy always attends these Flowers, after having flower'd extremely large and fair, or that they have been permitted to seed: So that it is absolutely necessary to sow Seeds every Year, in order to preserve a Succession of good Flowers.

The Soil which these delight most in, is a rich, light, sandy Earth; but whatever Dung is added to the Earth, should be very rotten, and ought to be mix'd with the Earth at least six Months before it be us'd: During which Time it should be often turn'd over to mix the Parts well together; and the lighter this Earth is, the better will the Flowers thrive: But, as I before said, it is by no means adviseable to sift or screen it too fine, for the Reasons already given. Some there are who mix rotten Tan, or Saw-dust with their Earth, to render it light; but this is also bad for these Flowers, as I have several times experienc'd, especially if either of these be not so rotten as to have quite lost its Appearance, and reduc'd to Earth: for tho' the Roots will often come up very strong, and flourish very vigorously till the Beginning of *February*; yet at that Season it is very common to have them die off in large Patches: Which, when I have ob-

serv'd, I have search'd to the Bottom of the Roots, and found some Part of the Tan or Saw-dust lying near them, which has detain'd the Moisture, and thereby rotted the Roots.

The Manner of preparing the Beds, and the Distance and Method of planting the Roots, being exactly the same as hath been already directed for the old Sorts, I shall not repeat it here, but will only observe, that these Flowers being more tender than the others, must be protected from hard Frosts and cutting sharp Winds, especially after *Christmas*, when their Flower-buds are forming; for if they are neglected at that Season, their Flowers will rarely prove fair; nor should you suffer them to receive too much Wet in Winter or Spring, which is equally as injurious to them as Frost. In planting of these Roots you should observe to place the semi-double Kinds, from which you intend to save Seeds, in separate Beds by themselves, and not intermix them with the double Flowers, because they will require to be treated in a different manner; for when the Flowers of the semi-double Kinds begin to fade, you should carefully guard them from Wet; for if they are permitted to receive hard Rains, or are water'd at that Season, the Seeds do rarely come to Maturity, or are so weak, that scarce one in fifty of them will grow.

When the Seed begins to ripen (which may be easily known by separating from the Axis, and falling) you should look it over every Day, gathering it as it ripens, for there will be a considerable Distance in the Seeds of the same Bed coming to Maturity, at least a Fortnight, and sometimes three Weeks

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Weeks or a Month. When you gather the Seed, it should not be expos'd to the Sun, but spread to dry in a shady Place; after which, you must put it up where the Vermin can't come to it, until the Time of sowing it.

By this Method of sowing Seeds every Year, you will not only increase your Stock of Roots, but also raise new Varieties, which may be greatly mended by changing the Seeds into fresh Ground; for if a Person continually sows his Seed in the same Garden, many Years, they will not produce near so fine Flowers, as if he procured his Seeds at some Distance; which is also the Case with most other Plants.

It will also be necessary to take away all the Earth out of the Beds in which the Roots were blown the precedent Year, and put in new, if you intend to plant *Ranunculus's* there again; otherwise they will not thrive near so well, notwithstanding you may add some new Compost to the Beds: And this is what all the curious Florists do continually observe.

RAPA; Turnip.

The Characters are;

The Flower consists of four Leaves, which are plac'd in Form of a Cross; out of the Flower-cup rises the Pincel, which afterwards turns to a Pod, divided into two Cells by an intermediate Partition, to which the Valves adhere on both Sides, and are full of roundish Seeds: To these Marks must be added, A carneous and tuberose Root.

The Species are;

1. RAPA; *sativa, rotunda, radice candida*. C. B. P. Round Garden Turnip, with a white Root.

2. RAPA; *sativa, rotunda, radice supra terram viridi*. Boerb. Ind.

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Round Garden Turnip, whose Root is green above Ground.

3. RAPA; *sativa, rotunda, radice punicea*. C. B. P. Round Garden Turnip, with a purple Root.

4. RAPA; *sativa, rotunda, radice obsolete nigricante*. C. B. P. Round Garden Turnip, with a rusty black Root.

5. RAPA; *sativa, rotunda, radice foris & intus flavescente*. C. B. P. Round Garden Turnip, with a yellow Root both within and without.

6. RAPA; *radice oblonga, seu femina*. C. B. P. Oblong or Female Turnip.

There are some other Varieties of this Plant, which differ in the Shape or Colour of their Roots; but as they are only seminal Variations, so it would be needless to enumerate them in this Place, since it is the first and third Sort here mention'd, which are chiefly cultivated for the Table in England. The yellow Sort, and that with long Roots, were formerly more cultivated than at present; for it is now very rare to see either of these brought to the Markets, though, some Years since, they were sold in as great Plenty as the common round Sort.

Turnips delight in a light, sandy Soil, which must not be rich, for in a rich Soil they grow rank and are sticky; but if it be moist they will thrive the better, especially in a fresh Land, where they are always sweeter than upon an old worn-out Soil.

The common Season for sowing of Turnips is any time from the Beginning of July to the Middle of August, or a little later; tho' it is not adviseable to sow them much after, because if the Autumn should not prove very mild, they

they will not have time to Apple before Winter. But notwithstanding this is the general Season in which the greatest Part of *Turnips* are sown in the Country, yet about *London* they are sown successively from *March* to *August*, by those who propagate them to supply the Markets with their Roots; but there is a great Hazard of losing those which are sown early in the Year, if the Season should prove dry, by the Fly, which will devour whole Fields of this Plant while young; so that where a small Quantity for the Supply of a Family is wanted, it will be absolutely necessary to water them in very dry Weather: And where a Person sows of those Seeds in *April*, *May* and *June*, it should always be upon a moist Soil, otherwise they seldom come to good, the Heat of the Weather at that Season being too great for them upon a dry Soil: But those which are sown towards the Middle or latter End of *July*, do commonly receive some refreshing Showers to bring them forward; without which, it is very common to have 'em all destroy'd.

These Seeds should always be sown upon an open Spot of Ground; for if they are near Hedges, Walls, Buildings, or Trees, they will draw up and be very long topp'd, but their Roots will not grow to any Size.

They are sown in great Plenty in the Fields near *London*, not only for the Use of the Kitchen, but for Food for Cattle in Winter when other Food fails; and this Way is become a great Improvement to barren, sandy Lands, particularly in *Norfolk*, where, by the Culture of *Turnips*, many Persons have dou-

bled the yearly Value of their Ground.

The Land upon which this Seed is sown should be ploughed in *May*, and twy-fallow'd in *June*, and made very fine; then the Seed should be sown pretty thin, for it being small, a little will sow a large Piece of Ground, four Pounds of this Seed is sufficient for an Acre of Land: The Seed must be harrow'd in, and the Ground rolled with a wooden Roll, to break the Clods and make the Surface even: In ten Days or a Fortnight after sowing, the Plants will come up; at which time, if the Season should prove dry, they will be in great Danger of being destroy'd by the Fly: But if it so happen, the Ground must be sow'd again, for the Seed being cheap, the chief Expence is the Labour.

When the Plants have got four or five Leaves, they should be hoed to destroy the Weeds, and to cut up the Plants where they are too thick, leaving the remaining ones about six or eight Inches asunder each Way, which will be Room enough for the Plants to stand for the first Hoeing: But in the second Hoeing, which must be perform'd about three Weeks or a Month after the first, they should be cut up, so as that the remaining Plants may stand fourteen or sixteen Inches Distance or more, especially if they are design'd for feeding of Cattle; for where the Plants are allow'd a good Distance, the Roots will be proportionably large, so that what is lost in the Number, will be over-gain'd by their Bulk; which is what I have often observ'd: But in such Places where they are sown for the Use of the Kitchen, they need not be left at

a greater Distance than ten Inches or a Foot, because large Roots are not so generally esteem'd for the Table.

In order to 'save good Turnip-Seeds, you should transplant some of the fairest Roots in February, placing them at least two Feet asunder each Way, observing to keep the Ground clear from Weeds, until the Turnips have spread so as to cover the Ground, when they will prevent the Weeds from growing; and when the Pods are form'd, you should carefully guard them against the Birds, otherwise they will devour it, especially when it is near ripe; at which time, you should either shoot the Birds as they alight upon the Seed, or lay some bird-lim'd Twigs upon it, whereby some of them will be caught, and if they are permitted to remain some time, and afterwards turn'd loose, they will prevent the Birds from coming there again for some time, as I have experimented. When the Seed is ripe, it should be cut up, and spread to dry in the Sun; after which it may be thrashed out, and preserved for Use.

RAPHANUS; Radish.

The Characters are;

The Flower consists of four Leaves, which are plac'd in Form of a Cross; out of the Flower-cup rises the Pointal, which afterwards turns to a Pod in Form of a Horn, that is thick, spongy, and furnish'd with a double Row of roundish Seeds, which are separated by a thin Membrane.

The Species are; -

1. RAPHANUS; *minor, oblongus*. C. B. P. Small oblong or common Radish.

2. RAPHANUS; *niger, major, rotundus*. Mor. Hist. Great round black Radish, commonly call'd, The Spanish Radish.

3. RAPHANUS; *major, orbicularis, floribus candidis*. C. B. P. Great Round-rooted Radish, with white Flowers.

4. RAPHANUS; *minus, oblongus, pyriformis, vulgô Ramurazza*. Hort. Cath. The lesser Radish, with an oblong Pear-shap'd Root.

5. RAPHANUS; *major, orbicularis, vel rotundus*. C. B. P. Greater Radish, with a round Root.

The first Sort here mention'd, is that which is commonly cultivated in Kitchen-Gardens for its Root; of which there are several Varieties, as the Small-topp'd, the Deep-red, and the Long-topp'd striped Radish; all which are Varieties arising from Culture: The Small-topp'd Sort is most commonly prefer'd by the Gardeners near London, because they require much less Room than those with large Tops, and may be left much closer together: And as the forward Radishes are what produce the greatest Profit to the Gardener, so these being commonly sown upon Borders near Hedges, Walls, or Pales, if they are of the large-topp'd Sort, they will be apt to grow mostly to Top, and not swell so much in the Root as the other, especially if they are left pretty close.

The Seasons for sowing this Seed are various, according to the Time when they are desir'd for Use: But the earliest Season is commonly toward the latter End of October, that the Gardeners near London sow them to supply the Market; and these, if they do not miscarry, will be fit for Use in March following, which is full as soon as most People care to eat them. These (as I said before) are commonly sown on warm Borders, near Walls, Pales, or Hedges, where they may be defended from the cold Winds.

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The second Sowing is commonly about *Christmas*, provided the Season be mild, and the Ground in a fit Condition to work: These, are also sow'd near Shelter, but not so near Pales or Hedges, as the first Sowing: These, if they are not destroy'd by Frost, will be fit for Use the Beginning of *April*: But in order to have a Succession of these Roots for the Table through the Season, you should repeat sowing of their Seeds once a Fortnight, from the Middle of *January* till the Beginning of *April*, always observing to sow the latter Crops upon a moist Soil, and an open Situation, otherwise they will run up, and grow sticky before they are fit for Use.

Many of the Gardeners near *London* sow *Carrot-Seed* with their early *Radishes*; so that many times when their *Radishes* are kill'd, the *Carrots* will remain; for the Seeds of *Carrots* commonly lie in the Ground five or six Weeks before they come up; and the *Radishes* seldom lie above a Fortnight under Ground; so that these are often up, and kill'd, when the *Carrot-Seed* remains safe in the Ground: But when both Crops succeed, the *Radishes* must be drawn off very young, otherwise the *Carrots* will be drawn up so weak as not to be able to support themselves when the *Radishes* are gone.

It is also a constant Practice with these Gardeners, to mix *Spinach-Seed* with their latter Crop of *Radishes*; so that when the *Radishes* are drawn off, and the Ground clean'd between the *Spinach*, it will grow prodigiously, and in a Fortnight's-time will as completely cover the Ground as tho' there had been no other Crop: And this *Spinach*, if it be of the broad-

leav'd Kind, will be larger and fairer than it commonly is when sown by itself; because where People have no other Crop mix'd with it, they commonly sow it too thick, whereby it is drawn up weak: But here the Roots stand pretty far apart, so that after the *Radishes* are gone, they have full Room to spread, and if the Soil be good, it is a prodigious Size this *Spinach* will grow to before it runs up for Seed: But this Husbandry is chiefly practis'd by the Gardeners who pay very dear for their Land, and are oblig'd to have as many Crops in a Year as possible, otherwise they could not afford to pay such large Rents.

When the *Radishes* are come up, and have got five or six Leaves, they must be pull'd up where they are too close, otherwise they will draw up to Top, but the Roots will not increase their Bulk: In doing of this, some only draw them out by Hand; but the best Method is to hoe them with a small Hoe, which will stir the Ground, and destroy the young Weeds, and also promote the Growth of the Plants. The Distance which these should be left, if for drawing up small, may be three Inches; but if they are to stand until they are pretty large, six Inches is full near enough; and a small Spot of Ground will afford as many *Radishes* at each sowing, as can be spent in a Family while they are good.

If you intend to save Seeds of your *Radishes*, you should, about the Beginning of *May*, prepare a Spot of Ground in Proportion to the Quantity of Seeds intended (but you should always make Allowance for bad Seasons, because it often happens, in a very dry Season, that

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there will not be a fourth Part of the Quantity of Seeds upon the same Proportion of Ground as there will be in a moist Season :) This Ground should be well dug and levell'd; then you should draw up some of the straitest and best colour'd *Radishes* (throwing away all such as are short, and that branch out in their Roots :) These should be planted in Rows three Feet distance, and two Feet asunder in the Rows, observing, if the Season be dry, to water them until they have taken Root; after which they will require no farther Care but only to hoe down the Weeds between them, until they are advanc'd so high, as to spread over the Ground, when they will prevent the Growth of Weeds.

When the Seed begins to ripen, you should carefully guard it against the Birds, who will otherwise destroy it: When it is ripe (which you may know by the Pods changing brown) you should cut it, and spread it in the Sun to dry; after which you should thresh it out, and lay it up for Use, where the Mice cannot come to it, otherwise they will eat it up.

The small round-rooted *Radish* is not very common in *England*, but in many Parts of *Italy* it is the only Sort cultivated: The Roots of this Kind are many times as large as a small *Turnip*, and are very sweet. This may be propagated in the same manner as the common Sort; but only with this Difference, *viz.* That this must not be sown till the Beginning of *March*, and the Plants allow'd a greater Distance. The Seeds of this Kind are very subject to degenerate when sav'd in *England*, so that it is proper to have them from Abroad every Year.

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The other round-rooted *Radishes* are rarely cultivated in *England*, but those who have a mind to have them, may sow them in the same manner as the last.

The *Black Spanish Radish* is only cultivated for Medicinal Use in *England*: The Seeds of this may be sown in *May*, and when the Plants come up, they should be hoed out, so as to leave the remaining ones ten Inches or a Foot asunder; after which they must be constantly cleared from Weeds in Summer, and in Autumn they will be fit for Use.

RAPUNTIIUM; Rampions, or Cardinal's Flower.

The Characters are;

The Flower consists of one Leaf, which is of an anomalous Figure, hollowed like a Pipe, and furrow'd or channell'd, divided as it were into many Parts, in the Shape of a Tongue, defended by a Vagina or Covering, which enfolds the Pointal: When the Flowers decay, the Flower-cup turns to a Fruit, divided into three Cells, full of small Seeds, which adhere to a Placenta, which is divided into three Parts.

The Species are;

1. RAPUNTIIUM; *maximum, coccineo, spicato flore.* Col. in Rech. Greater Rampions, with a Crimson-spiked Flower, commonly call'd, The Scarlet Cardinal's Flower.

2. RAPUNTIIUM; *Americanum, flore dilute caruleo.* H. R. Par. The Blue Cardinal's Flower.

3. RAPUNTIIUM; *Americanum, virga aurea foliis, parvo flore caruleo.* Tourn. Cardinal's Flower, with Golden-Rod Leaves, and a small Blue Flower.

There are several other Varieties of this Plant growing in divers Parts of *America*; but those here mention'd are all which I have observ'd

serv'd cultivated in *England*. The first Sort is greatly priz'd by the Curious for the Beauty of its rich Crimson Flowers, which exceed all the Flowers I have yet seen, in the Deepness of its Colour: And these commonly, when their Roots are strong, produce large Spikes of these Flowers, which continue a long time in Beauty, and make a most magnificent Shew amongst other Flowers. The Time of their Flowering is commonly in *July* and *August*, and if the Autumn proves very favourable, they will sometimes produce good Seeds in *England*. These Plants are Natives of *Virginia* and *Carolina*, where they grow by the Sides of Rivulets, and make a most beautiful Appearance; from whence the Seeds are often sent into *England*. These Seeds do commonly arrive here in the Spring; at which Time they should be sown in Pots fill'd with light Earth, and but just cover'd over, for if the Seeds are bury'd deep, they will not grow: These Pots should be placed under a Frame to defend them from Cold until the Season is a little advanc'd, but they should not be plac'd on a Hot-bed, which will also destroy the Seeds.

When the Weather is warm, towards the Middle of *April*, these Pots should be plac'd in the open Air, in a Situation where they may have the Morning-Sun till twelve o'Clock, observing to water them constantly in dry Weather; and when the Plants come up, they should be transplanted each into a small Pot fill'd with fresh light Earth, and plac'd in the same Situation, observing to water them in dry Weather; and in Winter they should be plac'd under a Hot-bed Frame, where they may

be shelter'd from severe Frosts; but in mild Weather, they should be as much expos'd to the open Air as possible.

The *March* following, these Plants should be put into larger Pots fill'd with the same fresh Earth, and plac'd, as before, to the Morning-Sun, observing to water them in dry Weather, which will cause them to flower strong the Autumn following.

These Plants are also propagated by parting of their Roots: The best Season for which is, either soon after they are past Flower, or in *March*, observing to water and manage them, as hath been directed for the Seedling Plants, both in Winter and Summer.

The Blue Sort does constantly produce ripe Seeds in *England*, which should be sown soon after they are ripe; in the Spring following the Plants will come up, when they should be transplanted and managed as the other Sort, with which Culture this will also agree. This is preserv'd for Variety; but the Flowers are not near so beautiful as those of the former Sorts.

The other Sort, with small Blue Flowers, is a biennial Plant, perishing as soon as the Seeds are ripe. This may be rais'd in the same Manner as the former, but is scarcely worthy of a Place in a Flower-garden.

RHABBARUM MONACHORUM; *vide* Lapathum.

RHAMNOIDES; the Sea Buckthorn.

The Characters are;

It hath the whole Appearance of the Buckthorn, but is Male and Female in different Trees: The Flowers of the Male have no Petals; the Flower-cup consists of two Leaves,

in the Center of which are several small Stamina: The Female Trees produce roundish Berries, each of which contains a single Seed.

The Species are;

1. RHAMNOIDES; *florifera, salicis foliis*. T. Cor. Male Willow-leav'd Sea Buckthorn.

2. RHAMNOIDES; *fructifera, foliis salicis, baccis leviter flavescens*. T. Cor. Female Willow-leav'd Sea Buckthorn, with yellow Berries.

These Plants do grow in great Plenty upon the Sea-Coasts of Lincolnshire, and at Sandwich, Deal and Folkston in Kent, as also in divers Parts of Scotland.

They are preserv'd in several Gardens near London for Variety; where, being intermix'd with other Shrubs of the same Growth, they afford an agreeable Prospect.

These Shrubs are easily propagated from Suckers, which they send forth in great Plenty from the old Plants. These Suckers may be taken off any time in February or March, and planted in a Nursery, where they may be train'd up for two or three Years; after which they may be remov'd to the Places where they are to remain. There is no very great Beauty in these Plants, but as their Leaves and Flowers are very different from most other Trees, so they make a pretty Variety in small Wilderness-Quarters; or when planted in Clumps with various Trees, they will grow to be ten or twelve Feet high; but it is very rare to see them larger.

RHAMNUS; The Buckthorn.

The Characters are;

It hath a Funnel-shap'd Flower, consisting of one Leaf, which is divided towards the Top into four or five Segments; out of the Flower-cup rises the Pointal, which afterwards be-

comes a soft roundish Berry, very full of Juice, inclosing four hard Seeds, which are round and smooth on the Outside, but flatt'd on the other.

The Species are;

1. RHAMNUS; *Catharticus*. C. B. P. Common purging Buckthorn.

2. RHAMNUS; *Catharticus, minor*. C. B. P. Lesser purging Buckthorn.

3. RHAMNUS; *spinis oblongis, cortice albo Monspeliensum*. J. B. Buckthorn with long Spines and a white Bark of Montpelier.

4. RHAMNUS; *Afer, folio pruni longiori, subrotundo, flore candicante, spinis longissimis*. Boerh. Ind. alt. African Buckthorn with a longer roundish Plum Leaf, white Flowers, and very long Spines.

5. RHAMNUS; *Hispanicus, folio Buxi, minor*. Town. Lesser Spanish Buckthorn with a Box Leaf.

6. RHAMNUS; *Afer, spinis longis, cortice albo, fructu caruleo*. Boerh. Ind. African Buckthorn with long Spines, a white Bark, and blue Fruit.

The first of these Trees is very common in the Hedges, in divers Parts of England; the Berries of which are order'd by the College of Physicians for Medicinal Use; but particularly for making a Syrup, which was formerly in great Use, but of late the Persons who supply the Markets with these Berries, have gathered several other Sorts of Berries, which they have either mixed with those of the Buckthorn, or have wholly substituted them in their Place; these are the Berries of the *Frangula*, *Cornus Fami-na*, &c. which Mixture hath spoil'd the Syrup, and render'd it less esteem'd. But whoever purchases the Buckthorn Berries, may distinguish

guish whether they are right or not, by opening them, and observing the Number of Seeds in each, for these have commonly four, whereas the *Frangula* has but two, and the *Cornus Fœmina* but one.

The second Sort is less common in *England*, and only to be found in Gardens where it is cultivated for Variety. Both these Sorts may be propagated by laying down their tender Branches in *Autumn*, which, if duly water'd in dry Weather, the succeeding Summer will take Root in the Compass of one Year, and may then be transplanted either where they are to remain, or in some Nursery, to be trained up for a few Years, and then removed to their Places of Growth.

The first Sort will grow to the Height of eighteen or twenty Feet, but being a straggling Grower, is seldom much cultivated in Gardens.

The second Sort seldom rises above eight Feet high, and so should be planted amongst Shrubs of the same Growth, where it will add to the Variety, tho' it has little more Beauty than the former.

They may also be propagated by Seeds, which must be sown on a Bed of fresh Earth, soon after they are ripe; the Spring following the Plants will appear, when they must be carefully clean'd from Weeds; the Autumn following they may be transplanted out, and managed as the Layers.

The third Sort is commonly preserved in Green-houses, in *England*, but is hardy enough to bear the Cold of our ordinary Winters in the open Air, if planted in a dry Soil, and defended from cold Winds.

This Plant may be propagated by laying down the tender Bran-

ches in the Spring, which if watered in dry Weather, will take Root before the *Michaelmas* following, at which Time they may be taken off and transplanted into Pots, fill'd with light fresh Earth, and in Winter placed in the Green-house. But if the young Plants are designed for the full Ground, they should continue upon the old ones until Spring, at which Time they may be taken off, and transplanted where they are to remain.

It may also be propagated by planting Cuttings in *May* or *June*, upon a Bed of light fresh Earth, observing to water and shade 'em until they have taken Root; and during the Summer Season they must be kept clear from Weeds, and at *Michaelmas* they may be planted into Pots, as the Layers, or else permitted to remain until Spring, when they may be removed, as was directed before. There is no great Beauty in this Plant, but it is preserved in several Gardens for the Sake of Variety.

The fourth, fifth, and sixth Sorts are also preserved in several curious Gardens for Variety, but the sixth is the most beautiful of 'em all; this produces vast Quantities of purple Flowers, most part of Summer, and many times ripens its Seeds in *England*: These may all be propagated as the last Sort, and require to be housed in Winter, tho' they need only be shelter'd from the extream Frost, but should have as much free Air as possible in mild Weather, and in Summer must be often watered. These delight in a fresh light Soil, and require to be often removed, because their Roots do greatly increase, so as to fill the Pots in a short Time.

RHUS; The Sumach Tree.

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The Characters are ;

The Flower consists of five Leaves, which are placed in a circular Order, and expand in Form of a Rose ; from whose Flower-cup rises the Pointal, which afterwards becomes a roundish or almost Kidney-shap'd Vessel, containing one Seed of the same Shape : To which Marks may be added, the Flowers growing in Bunches, and the Leaves are either winged or have three Lobes.

The Species are ;

1. RHUS ; *Virginianum*. C. B. P. Virginian Sumach, by some falsely called, The Stag's-horn-tree.

2. RHUS ; *tenuifolia Virginiana humilis* : *Rhus, angustifolium*. C. B. P. Pluk. Alm. Dwarf Virginian Sumach with narrow Leaves.

3. RHUS ; *Africanum, trifoliatum, majus foliis subtus argenteis, acutis & margine incis. Pluk. Phyt.* Great African three-leav'd Sumach, with narrow Leaves cut on their Edges, and white underneath.

4. RHUS ; *Africanum, trifoliatum, minus, glabrum, splendente folio subrotundo, integro, forte Lentiscus Africanus triphyllos quorundam. Pluk. Phyt.* Lesser three-leav'd African Sumach, with a whole, roundish, shining, smooth Leaf.

5. RHUS ; *Africanum, trifoliatum majus, folio subrotundo integro, molli & incano. Pluk. Phyt.* Greater three-leav'd African Sumach, with a whole, roundish, woolly Leaf.

The first of these Plants is pretty common in many Gardens near London, where it endures the severest Cold of the Winters in the open Air, and is usually intermix'd in small Wilderness Quarters, amongst other Trees of the like Growth, where it affords an agreeable Variety : This produces Tufts of small Flowers in June, at the Extremities of the Branches, which

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are succeeded by Seeds which are inclos'd in red Covers, so that the whole Spikes appear of a fine red Colour. These Tufts are sometimes used in Dying, and the Branches of the Tree are used for Tanning of Leather, in America, where these Trees grow in Plenty.

This Tree will grow to be eight or ten Feet high, but is very subject to produce crooked, unsightly Branches, so that it can't be reduc'd to a regular Stem, which renders it unfit to plant singly in an open Situation ; but amongst other Trees, where the Deformity of the Stem is hid, it looks very well.

The second Sort is less common than the first, and only to be found in some very curious Gardens. This is like the first, in most respects, but is of much smaller Growth, and the Leaves are very narrow. Both these may be propagated in Plenty, from the great Quantity of Suckers which they produce from their Roots, which being taken off in March, and planted on a light sandy Soil, will, in a few Years, produce Flowers. They may also be propagated by laying down of the Branches, in the Spring of the Year, which will take Root in the Compass of one Season, and may then be taken off and transplanted where they are to remain.

The African Sorts are all preserv'd in Pots or Tubs, and housed in Winter ; being too tender to endure the Cold of this Climate in the open Air. These may be propagated by laying down their young Branches into fresh Earth, observing to water them duly in dry Weather, which will greatly forward their Rooting : In one Year they will be fit to transplant, when they

they may be taken from the old Plants, and each placed in a separate Pot, fill'd with fresh light Earth. The best Time for transplanting of these Plants is in *April*, observing to water and shade them until they have taken Root, after which they may be exposed with *Myrtles*, *Oleanders*, and other hardy Exoticks, during the Summer Season, and in Winter must be housed with them, being equally as hardy, and only require to be screened from severe Frost.

These Plants do rarely produce Flowers in *England*, but as they retain their Leaves all the Winter, and may easily be reduced to a regular Head, so they are preserved for the Diversity of their Leaves, which adds to the Variety of a Green-house.

RIBES: The Currant-Tree.

The Characters are;

It hath no Prickles; the Leaves are large; the Flower consists of five Leaves, which are placed in a circular Order, and do expand in Form of a Rose; the Ovary, which arises from the Centre of the Flower-cup, becomes a globular Fruit, which are produced in Bunches.

The Species are;

1. RIBES; *vulgaris, acidus, ruber.* *J. B.* Common red Currant.

2. RIBES; *major, fructu rubro.* *H. Eyst.* The large Dutch red Currant.

3. RIBES; *vulgaris, acidus, albus, baccas ferens.* *J. B.* Common white Currant.

4. RIBES; *quæ Grossularia, hortensis, majore fructu albo.* *H. R. Par.* Large Dutch white Currant.

5. RIBES; *major fructu carneo.* The Champaign Currant, *vulgô.*

6. RIBES; *Alpinus dulcis.* *J. B.* The Gooseberry-leav'd Currant.

7. RIBES; *fructu parvo.* *Merr. Pin.* The small wild Currant.

8. RIBES; *nigrum vulgô dictum, folio olente.* *J. B.* The Black Currant.

9. RIBES; *vulgaris, foliis ex luteo variegatis.* The Yellow strip'd-leav'd Currant.

10. RIBES; *vulgaris, foliis ex albo eleganter variegatis.* The common Currant, with Leaves beautifully variegated with Green and White.

11. RIBES; *fructu albo, foliis ex albo variegatis.* The white Currant, with strip'd Leaves.

12. RIBES; *Alpinus dulcis, foliis variegatis.* The strip'd Gooseberry-leav'd Currant.

13. RIBES; *fructu nigro, foliis variegatis.* The black Currant with strip'd Leaves.

14. RIBES; *Americana, fructu nigro.* The American black Currant.

The five first mention'd Sorts are preserv'd in all curious Gardens for the Sake of their Fruits: Indeed of late Years, the common red and white Currants have been neglected, since the *Dutch* red and white have become plenty in *England*; these producing much larger and fairer Fruit to the Sight than the common Sorts, though I think the common Sorts are much better flavour'd; so that they should not be entirely neglected by such as are curious in Fruits.

The sixth Sort is preserved as a Curiosity, by such who delight in Variety, but the Fruit is not valuable.

The seventh Sort is found wild in *England*. The Fruit of this Kind is small, and very tart, which renders it unworthy of being cultivated in Gardens.

The eighth Sort is preserved in some old Gardens, but the Fruit having a disagreeable, strong Taste, has occasioned its being but little cultivated of late Years.

Those Sorts with variegated Leaves are preserved by such as are fond of strip'd Plants; but as their greatest Beauty is only in the Spring, before their Leaves grow large, after which they become more green; so they are scarcely worth preserving in a Garden.

The fourteenth Sort was obtain'd by Mr. *Peter Collinson* from *America*, in whose fine Garden it has produced Fruit, and from thence has been communicated to several other curious Gardens. The manner of this Plant's flowering is very different from the other Sorts of Currants, for which Variety it may have a Place among other Shrubs; but the Fruit being somewhat like our Black Currant, is not much esteem'd.

All these Sorts may be easily propagated by planting their Cuttings any time from *September* to *March*, upon a Spot of fresh Earth, which in the Spring must be kept very clear from Weeds, and in very dry Weather if they are water'd, it will greatly promote their Growth; These may remain two Years in this Nursery, during which time they must be pruned up for the Purposes design'd, *i. e.* either to clear Stems, if for Standards, or if for Walls, Pales, or Espaliers, they may be trained up flat.

Then they should be planted out where they are to remain; the best Season for which is soon after the Leaves begin to decay, that they may take Root before Winter, so that they may be in no Danger of suffering from Drought in the Spring.

These Plants are generally planted in Rows, at about ten Feet asunder; and four Distance in the Rows; but the best Method is to train them against low Espaliers, in which manner they will take up much less Room in a Garden, and their Fruit will be much fairer.

The Distance they should be placed for an Espalier, ought not to be less than eight Feet; that their Branches may be trained horizontally, which is of great Importance to their Bearing.

Those that are planted against Pales or Walls, should also be allowed the same Distance; if they are planted against a South-East Wall or Pale, it will cause their Fruit to ripen at least a Fortnight or three Weeks sooner than those in the open Air, and those which are planted against a North Wall or Pale, will be proportionably later; so that by this Method the Fruit may be continued a long Time in Perfection, especially if those against the North Pales are matted in the Heat of the Day.

These Plants produce their Fruit upon the former Year's Wood, and also upon small Snags which come out of the old Wood, so that in pruning 'em, these Snags should be preserved, and the young Shoots shortened in proportion to their Strength. The only Method, very necessary to be observed in pruning of them, is not to lay the Shoots too close, and never to prune their Snags to make 'em smooth; this, with a small Care in observing the Manner of their Growth, will be sufficient to instruct any Person how to manage this Plant, so as to produce great Quantities of Fruit.

These Plants will thrive and produce Fruit in almost any Soil or Situation, and are often planted under

under the Shade of Trees; but the Fruit is always best when they are planted to the open Air, and upon a dry Soil.

RICINOIDES; Physick-nut, *vulgô*.

The Characters are;

The Male Flowers consist of several Leaves, which are placed in a circular Order, and do expand in Form of a Rose; these are barren: At remote Distances from these Flowers, upon the same Plant, are produc'd the Embryo's, which are wrapt up in the Flower-cup, and afterwards do become tricapsular Fruits, containing one oblong Seed in each Cell.

The Species are;

1. **RICINOIDES**; *Americana*, *Gossypii folio*. Tourn. American Physick-nut, with a Cotton Leaf.

2. **RICINOIDES**; *arbor, Americana*, *folio multifido*. Tourn. Tree American Physick-nut, with a multifid Leaf, commonly called in the West-Indies, French Physick-nut.

3. **RICINOIDES**; *Americana*, *staphisagria folio*. Tourn. American Physick-nut with a Staves-acre Leaf, called in the West-Indies, Belly-ach-weed and Wild Casada.

4. **RICINOIDES**; *Americana*, *Æleagni folio*. Plum. American Physick-nut, with a wild Olive Leaf.

These Plants are very common in the warm Parts of *America*. The first Sort is planted in Hedges, in most Parts of *Jamaica* and *Barbados*, and is propagated by Slips or Cuttings, which will take Root very freely, and do make a good Fence in a short Time, being very quick of Growth. This rises to be twenty Feet high, and produces a great Quantity of Nuts, which are given from three to seven, for a Vomit; but if the thin Film be taken off, they may be eaten in Quantities without any ill Effect.

There is an Oil drawn from these Seeds, which is used for burning in Lamps.

The second Sort is cultivated in Gardens in *Jamaica* and *Barbados*, for the Beauty of its Flowers, which are of a fine scarlet Colour, and produced in large Bunches on divers Parts of the Plant. The Nuts of this Kind are larger than the other, but have much the same Quality. This is not a Native in any of the English Settlements in the West-Indies, but was brought thither either from the Spanish or French Settlements, from whence it had the Names of French and Spanish Physick-Nut.

The third Sort is very common in the Savannas in *Jamaica* and *Barbados*; the Seed of this Kind is the common Physick among the poorer Sort, for the dry Belly-ach.

The fourth Sort grows plentifully upon the Sea-Coast in divers Parts of the West-Indies, and is sometimes brought into England as a Curiosity; where, in some very good Gardens, it is preserved with the former Sorts.

These may be all propagated by sowing their Seeds upon a Hot-bed in the Spring, and when the Plants are come up, they should be each transplanted into a separate Pot, fill'd with light fresh Earth, and plunged into a Hot-bed of Tanners-Bark, observing to shade 'em until they have taken Root, after which they should have Air and Water in Proportion to the Warmth of the Season, and the Hot-bed in which they are placed.

When their Roots have filled these Pots, they should be shaken out, and put into larger Pots, filled with the same fresh Earth, and plunged again into the Hot-bed; and so, from time to time, as the Plants

Plants advance, they should be shifted into larger Pots, and when they are too high to be contained under a Frame, they should be removed into the Bark-Stove, where they may have Room to advance in Height, observing to water them duly, as they may require it; which if constantly performed, and the Plants kept in a warm Bed, they will grow three or four Feet high the first Summer, and divide into several Branches in Winter.

These Plants must be placed in a Bark-Stove, (with other Plants which are the Produce of the same Countries) during which Season they should be often refresh'd with Water, and the Stove should be kept up to *Anana's* Heat, (as mark'd on Mr. *Fowler's* Thermometers); in this they will continue flourishing all the Winter, and early the next Spring will produce Flowers, which will be succeeded by Fruit.

These Plants, if thus managed, will continue several Years, and annually produce a great Number of Flowers and Fruit, so that they are worthy of a Place in every curious Collection of Exotick Plants.

RICINUS; *Palma Christi*, *vulgô*.

The Characters are;

The Flowers are apetalous, (i. e. have no Leaves) consisting of many Stamina, which arise in the Center of the Flower-cup; these are barren; for the Embryo's are produced at remote Distances, upon the same Plant, which afterwards become triangular Fruits, having three Cells, in each of which is contained one oblong Seed, which has a hard Shell.

The Species are;

1. **RICINUS**; *vulgaris*. C. B. P. The common *Palma Christi*, com-

monly known in the *West-Indies* by the Name of Oil-Nut, or *Agnus Castus*.

2. **RICINUS**; *vulgaris*, *minor*. C. B. P. *caule rutulante*. The lesser *Palma Christi* with reddish Stalks, commonly called, in *Barbados*, Red Oil Seed.

3. **RICINUS**; *vulgaris*, *minor*. C. B. P. *caule virescente*. Lesser *Palma Christi* with green Stalks, commonly called White Oil Seeds in *Barbados*.

4. **RICINUS**; *Americanus*, *major*, *caule virescente*. H. R. P. The greater *Palma Christi* with green Stalks.

5. **RICINUS**; *Africanus*, *maximus*, *caule geniculato rutilante*. H. R. P. The greatest African *Palma Christi* with reddish jointed Stalks.

These Plants are very common in divers Parts of *Africa* and *America*, and some of them are also found in the warm Parts of *Europe*; but in *England* they are preserved with great Care in several curious Gardens.

The first Sort has been a long Time in this Country, but was formerly treated as an annual Plant, whereas if it be preserved in a good Green-house, it will abide two or three Years, and become a large Plant.

The second and third Sorts do grow promiscuously all over *America*, where their Seeds are gathered to draw an Oil from them, for the use of Lamps; these Seeds are frequently sent into *England*, intermixed with each other.

The fourth Sort is also very common in *America*, growing promiscuously with the common Sort; the Seeds of both being gather'd indifferently to draw an Oil from them.

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The fifth Sort, tho' mention'd to be a Native of *Africa*, yet is also very common in divers Parts of *America*, from whence I have several times receiv'd the Seeds. This produces very large Leaves and Seeds, and will grow to a large Size if planted in a rich Soil. I have measur'd one of the Leaves of this Plant (which was growing near *Chelsea*) which was upwards of two Feet Diameter, and the Stem was as large as a middle-siz'd Broom-staff, tho' but of one Summer's Growth.

These Plants may be propagated by sowing their Seeds upon a Hot-bed; and when they are come up, they should be each planted into a separate Pot fill'd with light fresh Earth, and plung'd into a fresh Hot-bed, observing to water and shade them until they have taken Root; after which they must have a great Share of free Air, when the Season is mild, otherwise they will draw up tall, and be very weak: And as these Plants grow very fast, so their Roots will in a short Time fill the Pots, therefore they should be shifted into larger Pots fill'd with the like fresh Earth; and toward the latter End of *May*, when the Season is warm, they may be harden'd to endure the open Air by degrees; and then, if they are planted out into a very rich Border, and in dry Weather duly water'd, they will grow to a very large Size, particularly the first Sort, which I have seen upwards of ten Feet high in one Season; and these Plants have produc'd a great Quantity of Flowers and Seeds: But if you intend to preserve them through the Winter, they must never be plac'd in the full Ground, because after their Roots have been widely extended, there will be no trans-

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planting them with Safety; therefore the best Way is to shift them into larger Pots from time to time as their Roots shall require, placing them in the open Air, during the Summer Season, in some warm Situation, where they may remain until *October*, when they must be remov'd into the House with other Exotick Plants, observing duly to water them in Winter, and let them have free Air in mild Weather, for they only require to be protected from Frost and cold Winds, so that they will endure the Winter in a common Green-house without any Addition of artificial Warmth.

The four first Sorts will perfect their Seeds the first Season in this Climate, provided they are sown early in the Spring, but the fifth Sort will rarely produce any till the second Year; so that there is a Necessity of preserving this through the Winter, otherwise it cannot be maintain'd in *England*.

These Plants do deserve a Place in every curious Garden for the singular Beauty of their Leaves, (notwithstanding their Flowers are not very valuable) especially those Sorts which may be propagated every Year from Seeds, because those Persons who have no Green-house to place them into in Winter, may cultivate them as other annual Plants; amongst which these being plac'd either in Pots or Borders, do afford an agreeable Variety: But it must be observ'd, as these are large growing Plants, never to place them too near other Plants of less Growth, because these will overbear and destroy them; and those which are planted in Pots should be allow'd room for their Roots to expand, and must be frequently water'd, otherwise they will not grow very large.

RIPEN-

RIPENING of FRUIT.

The Method of producing Early Fruits.

A Wall should be erected ten Feet high, and in Length according to the Number of Trees intended for three Years Forcing.

This being done, a Border may be mark'd out about four Feet wide on the South-side of it, and some Scantlings of Wood about four Inches thick, must be fasten'd to the Ground in a strait Line on the Outside of the Border to rest the Glass Lights upon; which Lights are to slope backwards to the Wall, to shelter the Fruit as there shall be Occasion.

Bars about four Inches wide, cut out of whole Deal, must be plac'd between these Glasses, so that the Lights may rest on them.

If you would not have the Glass-Lights slope so much as they will from this Fall from the Upright, then you may have a Line of whole Deals fix'd on the Top of the Wall to project their whole Breadth over the Trees, and made so that the Top of the Glass-Lights may fall in an Inch or two under them: There must also be a Door shap'd to the Profile of the Frame at each End, that it may be open'd at either of the Ends, according as the Wind blows.

The Frame before-mention'd should be made so, that when the first Part has been forc'd, the Frame may be mov'd the next Year forward, and the succeeding Year forward again; so that the Trees will be forc'd but every third Year; and having two Years to recover themselves, will continue strong for many Years.

These Trees should be well grown before they are forc'd, otherwise they will soon be destroy'd,

and the Fruit produc'd on grown Trees will be much fairer and better tasted than on fresh-planted Trees.

The Fruit that may be planted in these Frames are,

The *Avant*, the *Albemarle*, the *Ann*, the *Early Newington* and *Brown Nutmeg Peaches*.

Mr. Fairchild's *Early*, the *Elruge* and *Newington Nectarines*; the *Masculine Apricock*; the *May Duke* and *May Cherry*.

As for *Grapes*; the *White* and *Black Sweet-water*.

Gooseberries; the *Dutch White*, the *Dutch Early Green*, and the *Walnut-Gooseberries*.

Currants; the *large Dutch White*, the *large Dutch Red Currants*.

It has been found by Experience, that the Trees will be injur'd, if the Heat be apply'd before *November*: And that the Time for applying the Heat for bringing either *Duke* or *May Cherries*, is about the Middle or latter End of that Month, and applying Heat at the same Time would do for *Apricocks*; so that the *Masculine Apricock* will, in *February*, be as large as *Duke Cherries*, and will be ripe by the Beginning of *April*.

Cherries thus forc'd will not hold so well as *Apricocks*, tho' the former will last, perhaps, for seven Years in good Plight; but *Apricocks* will thrive and prosper thus many Years.

It is very likely that Mr. Fairchild's *Early Nectarines* would ripen much about the same Time as the *Masculine Apricock*, if they were both forc'd at the same Time; and the *Brugnon Nectarine* would follow that. As to the forward Sorts of *Plums*, they have been try'd, and do ripen about the latter End of *April*.

Goose-

Gooseberries would produce green Fruit fit for Tarts in *January* and *February*, and probably would ripen about the End of *March* or the Beginning of *April* at the farthest.

Curants, which tend to shoot forward, might, by the same Heat that brings *Cherries* in *February*, be forc'd to produce ripe Fruit in *April*, if not sooner.

As for the Distance of these Trees one from another, it need not be so great as is directed for those planted in the open Air, because they will never shoot so vigorously, therefore eight or nine Feet will be sufficient.

The higher Parts of the Wall being furnish'd with *Apricocks*, *Cherries*, *Nectarines*, *Peaches* and *Plums*, the lower small Space between them may be fill'd up with *Currants*, *Gooseberries* and *Roses*.

As to the Pruning of the Trees:

The Time of doing it in these Frames, must not be the same as in other Trees; because in the common Case of *Stone-Fruit* against Walls, the Spring does not begin till the End of *January*; but in the forcing Frames, the Spring begins in *November*: Therefore they should be prun'd three Weeks before the Heat is apply'd; for then the Air will be so artificially temper'd, as to set the Trees a growing, and the Frosts cannot come at them, if the Glasses be set up as soon as they are prun'd.

As to the nailing of these Trees:

Every Branch that shoots must be laid as close to the Wall as can be; for the Fruit which touches the Wall will be ripe a Month sooner than those that lie but two Inches from it.

Sometimes it happens that the Tops of such Trees have Blossoms a Month or six Weeks before the

Bottom; and sometimes one Branch has been full of Blossoms, when there have been half a Score or more Branches of the same Tree which have not stirr'd till the Fruit of the first Blossoms has been almost ripe, notwithstanding which the Tree has done very well: And it is no uncommon Thing for such Trees to have Fruit ripening upon them for near three Months continually.

As for *Gooseberries*; such Plants as are planted in these Frames, should be such as have spread; and when as many Shoots have been nail'd to the Wall as may conveniently be done, others may be left at a Distance from it, to succeed them in ripening.

If they are taken up in the Summer, and properly manag'd, they will bear Fruit the first Year, as well as if they had not been transplanted.

The *Currants* may be order'd after the same Manner, and also the *Roses*: And the best kind of *Rose* for this Purpose, is the *Monthly Rose*, which ought always to be topped about the End of *July* or the Beginning of *August*, to make them put out a good Number of Flower-buds.

As to the laying the Dung to the Wall;

The Dung, before it be laid to the Back of the Wall, should be thrown up in an Heap and lie for some Days, that it may yield an equal Heat every where, and be constant.

When it has been thus prepar'd, it should be laid about four Feet thick at the Base, and so sloping, till it has but two Feet wide at the Top.

It should be laid at first within four Inches of the Top of the Wall,

Wall, for it will sink to about three Feet in six Weeks time; and then some fresh Dung must be laid, because the first Heat will not do much more than swell the Buds of the Trees, or begin to bring them to a green Colour, or at the most will but barely shew the Colour of the Blossom-Buds.

But according as the Frosts shall have happen'd to have had more or less Influence over the Buds, this will happen sooner or later.

If these Trees be cover'd with the Glasses, it will contribute very much to forward their Blossoming; for tho' their Blossoms will not be destroy'd by the Frosts, yet the more the Frosts come at them, they will both be the drier, and more hard to open.

If the Weather be tolerably mild, the Trees ought not to be hinder'd from the Benefit of the Showers till the Buds begin to stir; but afterwards the Glasses should be kept constantly over them till the Influence of the Sun is something considerable.

But the Doors which are at each End of the Frame, should, in the mean time, be set open, when the Wind does not blow too sharp, and the Sun shines any thing warm: And if this does not happen in the Space of a Fortnight, then the Doors at both Ends may be open'd, and Mats of Bais or Canvass should be hung up over the Door-ways to correct the Winds, and give the Air leave to circulate in the Frames.

As for *Cherries*; about three Changes of Dung will be sufficient to bring them to a due Ripeness in *February*, supposing each Parcel remains a Month at the Back of the Wall.

But as for *Apricocks*, *Grapes*, *Ne-*

Clarines, *Peaches* and *Plums*, if *April* proves cold, the forcing Heat must be continu'd till *May* is settled; but some of the Glasses should be open'd in the Morning, in *March* and *April*, when the Wind is still, and the Sun warm; and they should be permitted to receive the Showers that fall, while the Fruit is growing; but while they are in Blossom no Rain should come near them, because if there should be any Moisture lodg'd in the Bosom of the Flowers, and the Sun should shine hot thro' the Glasses, it would be apt to destroy them.

The Dung that comes from these Frames having lost its Heat, may be laid in Heaps to rot for the meliorating of stubborn Grounds.

Another thing which ought to be observ'd in planting *Fruit* in these Frames, is to plant those *Fruits* which come forward together, and those which come late by themselves, because it will be prejudicial to the forward *Fruit* to give them any more Heat when they have done bearing; when at the same time the later Fruits set amongst them may require more Heat, and to be continued longer; some of them, perhaps, requiring an artificial Heat till *May*.

There may also a Row or two of *Scarlet Strawberries* be planted near to the Back of this Frame; and these you may expect will be ripe by the End of *February* or Beginning of *March*.

As for the *Vines*, they may probably be brought to blossom, and have ripe *Grapes* in *May*.

There may also be here and there planted a *Monthly Rose-tree*, and *Hyacinths*, *Jonquils*, *Narcissus's*, *Polyanthus's*, and also early *Tulips* might be planted in the Borders.

ROSA; The Rose-Tree.

The

The Characters are;

The Flower is compos'd of several Leaves, which are plac'd circularly, and do expand in a beautiful Order; whose leafy Flower-cup afterwards becomes a roundish or oblong fleshy Fruit, inclosing several angular hairy Seeds: To which may be added, It is a weak, pithy Shrub, for the most part beset with Prickles, and hath pinnated Leaves.

The Species are;

1. ROSA; *sylvestris*, *inodora*, *seu canina*. Park. Theat. The Wild Briar, Dog Rose, or Hep Tree.
2. ROSA; *sylvestris*, *fructu majore*, *hispido*. Raii Syn. Wild Briar or Dog Rose, with large prickly Heps.
3. ROSA; *sylvestris*, *pomifera major*, *nostras*. Raii Syn. The greater English Apple-bearing Rose.
4. ROSA; *pumilla*, *spinossissima*, *foliis pimpinella glabris*, *flore albo*. J. B. The Dwarf Wild Burnet-leav'd Rose.
5. ROSA; *pumilla*, *spinossissima*, *foliis pimpinella glabris*, *ex luteo & viridi eleganter variegatis*. The Dwarf Wild Burnet-leav'd Rose, with variegated Leaves.
6. ROSA; *pimpinella minor*, *Scotica*, *floribus ex albo & carneo eleganter variegatis*. Pluk. Alm. The strip'd Scotch Rose.
7. ROSA; *sylvestris*, *foliis odoratis*. C. B. P. The Sweet-Briar or Eg-lantine.
8. ROSA; *sylvestris odora*, *sive Eglanteria*, *flore duplici*. Park. Parad. Sweet-Briar, with a double Flower.
9. ROSA; *rubra*, *multplex*. C. B. P. The double Red Rose.
10. ROSA; *Damascena*. Park. Parad. The Damask Rose.
11. ROSA; *Provincialis*, *sive Hollandica*, *Damascena*. Park. Parad. The Damask Provence Rose.

12. ROSA; *Provincialis*, *major*, *flore pleno*, *ruberrimo*. Boerh. Ind. Atl. The Red Provence Rose.

13. ROSA; *centifolia*, *Batavica*. Clus. H. The Dutch Hundred-leav'd Rose.

14. ROSA; *Provincialis spinossissima*, *pedunculo muscoso*. The Moss Provence Rose.

15. ROSA; *Provincialis rubra*. Park. Parad. The Common Provence Rose.

16. ROSA; *holosericea*, *simplex*. Park. Parad. The single Velvet Rose.

17. ROSA; *holosericea*, *multplex*. Park. Parad. The double Velvet Rose.

18. ROSA; *odore Cinnamomi*, *flore pleno*. C. B. P. The double Cinnamon Rose.

19. ROSA; *odore Cinnamomi*, *simplex*. C. B. P. The single Cinnamon Rose.

20. ROSA; *lutea*, *simplex*. C. B. P. The single Yellow Rose.

21. ROSA; *lutea*, *multplex*. C. B. P. The double Yellow Rose.

22. ROSA; *sylvestris*, *Austriaca*, *flore Phœnicio*. Park. Theat. The Austrian Rose.

23. ROSA; *sylvestris*, *Austriaca*, *flore totum luteum*. The Yellow Austrian Rose.

24. ROSA; *uno ramo luteos*, *cæteris pruniceos*, *flores gerens simplices*. Boerh. Ind. Alt. The Austrian Rose, with yellow Flowers upon one Branch, and purple Flowers on the other.

25. ROSA; *alba*, *vulgaris major*. C. B. P. The common White Rose.

26. ROSA; *alba*, *minor*. C. B. P. The lesser White Rose.

27. ROSA; *candida*, *semiplena*. J. B. The semi-double White Rose.

28. ROSA;

28. ROSA ; *incarnata*. Park. Parad. The Blush Rose.

29. ROSA ; *Pranestina, variegata, plena*. Hort. Eyst. The York and Lancaster Rose.

30. ROSA ; *rubro & albo variegata, Rosa Mundi, vulgò dicta*. Raii Hist. The Rose of the World, or *Rosa Mundi*.

31. ROSA ; *Francofurtensis*. Park. Parad. The Frankfort Rose.

32. ROSA ; *sempervirens*. Park. Parad. The Ever-green Rose.

33. ROSA ; *omnium Calendarum*. H. R. Par. The Monthly Rose.

34. ROSA ; *omnium Calendarum, flore variegato*. The strip'd Monthly Rose.

35. ROSA ; *sine spinis, flore minore*. C. B. P. The Rose without Thorns.

36. ROSA ; *sine spinis, flore majore ruberrimo*. The Royal Virgin Rose.

37. ROSA ; *sylvestris, Virginienfis*. Raii Hist. The Wild Virginian Rose.

38. ROSA ; *moschata, simplici flore*. C. B. P. The single Musk Rose.

39. ROSA ; *moschata, flore pleno*. C. B. P. The double Musk Rose.

40. ROSA ; *moschata sempervirens*. C. B. P. The Ever-green Musk Rose.

41. ROSA ; *Belgica, sive vitrea, flore rubro*. Rea. Flor. The Red Belgick Rose.

42. ROSA ; *Belgica, sive vitrea, flore rubicante*. Rea. Flor. The Blush Belgick Rose.

43. ROSA ; *marmorea*. Rea. Flor. The marbled Rose.

44. ROSA ; *Provincialis, flore simplici*. The single Provence Rose.

45. ROSA ; *Damascena, flore simplici*. The single Damask Rose.

46. ROSA ; *pimpinella minor, Scotica, flore livide rubente*. The Dwarf

Scotch Rose, with a blueish red Flower.

The first Sort of Rose grows wild in the Hedges in most Parts of England: The Fruit of this Tree is made into a Conserve for Medicinal Use; but this is seldom cultivated in Gardens.

The second, third and fourth Sorts do also grow wild in divers Parts of England, and are rarely preserv'd in Gardens, unless for Variety Sake.

The fifth Sort is a Variety of the fourth, and is preserv'd by some for the Beauty of its strip'd Leaves.

The sixth Sort is found wild in Scotland, and has been by many suppos'd to be the same as the fourth Sort, but only differing therefrom in having variegated Flowers; which is a great Mistake, for I have observ'd, where the two Sorts were cultivated on the same Soil for many Years, and yet retain'd a considerable Difference in the Size of the Plants, the Scotch Sort being not half so large as the other, yet the Flowers were much larger, the Leaves were less, and the Branches much weaker than those of the fourth Sort.

The last Sort here mention'd, was rais'd from the Seeds of the Scotch Rose; and altho' the Flowers were plain colour'd, yet the whole Appearance of the Plant continues the same as the original Kind, which is a plain Proof of its being different from the fourth Sort.

The Sweet-Briar, although wild in some Parts of England, yet is preserv'd in most curious Gardens for the extreme Sweetness of its Leaves, which perfumes the circumambient Air in the Spring of the Year, especially after a Shower of Rain. The Flowers of this Sort being

being single, are not valued, but the Branches of the Shrubs are cut to intermix with Flowers to place in Basons to adorn Halls, Parlours, &c. in the Spring of the Year, the Scent of this Plant being agreeable to most Persons.

The Double-flower'd *Sweet-Briar* is preserv'd on the Account of its beautiful Flowers, as well as for the Sweetness of its green Leaves.

All the other Sorts of *Roses* are originally of foreign Growth, but are hardy enough to endure the Cold of our Climate in the open Air, and produce the most beautiful and fragrant Flowers of any kind of Shrubs yet known: This, together with their long Continuance in Flower, has justly render'd them the most valuable of all the Sorts of flowering Shrubs; besides the great Variety of different Sorts of *Roses*, do make a Collection of Flowers, either for Basons or in the Garden, without any other additional Mixture; and their Scent being the most inoffensive Sweet, is generally esteem'd by most Persons.

But in order to continue these Beauties longer than they are naturally dispos'd to last, it is proper to plant some of the monthly *Roses* near a warm Wall, which will occasion their Budding at least three Weeks or a Month before those in the open Air; and if you give them the Help of a Glass before them, it will bring their Flowers much forwarder, especially where Dung is plac'd to the Backside of the Wall (as is practis'd in raising Early Fruits :) By this Method I have seen fair *Roses* of this Kind blown in *February*, and they may be brought much sooner, where People are curious this Way.

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You should also cut off the Tops of such Shoots which have been produc'd the same Spring, early in *May*, from some of these Sorts of *Roses* which are planted in the open Air, and upon a strong Soil: This will cause them to make new Shoots, which will flower late in Autumn; as will also the late removing the Plants in Spring, provided they do not suffer by Drought, as I have several times experienc'd; but particularly in the Year 1718, when I had occasion to remove a large Parcel of these Plants in *May*, just as they were beginning to flower: In doing of which, I cut off all the Flower-buds, and after having open'd a Trench in the Place where they were to be planted, I poured a large Quantity of Water, so as to render the Ground like a Pap; then I took up the Plants, and plac'd them therein as soon as possible, that their Roots might not dry; and after planting them I water'd the Ground well again, and cover'd the Surface over with Mulch, to prevent its drying; after this I repeated watering the Plants all over two or three times a Week in the Evening, until they had taken Root: In about three Weeks time, the Plants shot out again, and produc'd a great Quantity of Flowers in *August* and *September*, which were as fair as those produc'd in *June*. This is the only Sort of *Rose* for this Purpose, there being no other Sort which will flower both early and late except this.

The next Sort of *Rose* which flowers in the open Air, is the *Cinnamon*, which is immediately follow'd by the *Damask Rose*; then the *Blush*, and *York*, and *Lancaster* come; after which, the *Provence*;

A a

Dutch

Dutch Hundred-leav'd White, and most other Sorts of *Roses* do follow; and the latest Sorts are the two *Musk Roses*, which, if planted in a shady Situation, do seldom flower until *September*; and if the Autumn proves mild, will continue often till the Middle of *October*.

The Plants of these two Sorts should be placed against a Wall, Pale, or other Building, that their Branches may be supported; otherwise, they are so slender and weak as to trail upon the Ground; these Plants should not be pruned until Spring, because their Branches are somewhat tender, so that when they are cut in Winter they often die after the Knife. These produce their Flowers at the Extremity of the same Year's Shoots, in large Bunches, so that their Branches must not be shortened in the Summer, lest hereby the Flowers should be cut off. These Shrubs will grow to be eight or nine Feet high, and must not be check'd in their Growth, if you intend they should flower well, so that they should be placed where they may be allowed Room.

The lowest Shrub of all the Sorts here-mention'd, is the *Scotch Rose*, which rarely grows above two Feet high, so that this must be placed among other Shrubs of the same Growth. The *Red Rose* and the *Rosa Mundi* do commonly grow from three to four Feet high, but seldom exceed that; but the *Damask*, *Provence*, and *Frankfort Roses* grow to the Height of seven or eight Feet; so that in Planting of them, great Care should be taken, to place their several Kinds, according to their various Growths, amongst other Shrubs, that they may appear beautiful to the Eye.

The *Frankfort Rose* is of little Value, except for a Stock, to bud the more tender Sorts of *Roses* upon, for the Flowers do seldom open fair, and have no Scent; but it being a vigorous Shooter, renders it proper for Stocks to bud the *Yellow* and *Austrian Roses*, which will render them stronger than upon their own Stocks; but the *Yellow Roses* do seldom blow fair within eight or ten Miles of *London*, tho' in the Northern Parts of *Great-Britain*, they do flower extremely well. This Sort must have a Northern Exposure, for if it is planted too warm, it will not flower.

All the Sorts of *Roses* may be propagated either from Suckers, Layers, or by budding them upon Stocks of other Sorts of *Roses*, which latter Method is only practis'd for some peculiar Sorts, which do not grow very vigorous upon their own Stocks, and send forth Suckers very sparingly; or where a Person is willing to have more Sorts than one upon the same Plant; but then it must be observed, to bud such Sorts upon the same Stock as are nearly equal in their manner of Growth; for if there be a Bud of a vigorous growing Sort, and some others of weak Growth, the strong one will draw all the Nourishment from the weaker, and entirely starve them.

The best Sort for Stocks is the *Frankfort Rose*, which is a vigorous Grower, and produces strong, clean Shoots, which will take the Buds much better than any other Sort of *Rose*; but you must be very careful to keep the Stock after Budding intirely clear from Suckers or Shoots at the Bottom, for if they are permitted to remain on, they will, in a short time, starve the

the Buds. The best Season for budding of *Roses* is in *June*; the Manner of doing it, being the same as for Fruit-Trees, need not be repeated here.

If you would propagate them from Suckers, they should be taken off annually in *October*, and transplanted out either into a Nursery in Rows (as hath been directed for several other Sorts of flowering Shrubs) or into the Places where they are to remain; for if they are permitted to stand upon the Roots of the old Plants more than one Year, they grow woody, and do not form so good Roots as if planted out the first Year, and so there is more Danger of their not succeeding.

But the best Method to obtain good rooted Plants, is to lay down the young Branches in Autumn, which will take good Root by the Autumn following (especially if they are water'd in very dry Weather;) when they may be taken from the old Plants, and transplanted where they are to remain. These Plants may be transplanted any time from *October* to *April*; but when they are design'd to flower strong the first Year after planting, they should be planted early; though, as I said before, if they are planted late in the Spring, it will cause them to flower in Autumn, provided they do not suffer by Drought.

Most of these Sorts do delight in a rich moist Soil, and an open Situation, in which they will produce a greater Quantity of Flowers, and those much fairer than when they are upon a dry Soil, or in a shady Situation. The pruning which they require, is only to have their dead Wood cut out, and the Suckers clear'd off, which should

be done every Autumn; and if there are any very luxuriant Branches which draw the Nourishment from the other Parts of the Plant, they should be taken out or shorten'd, to cause it to produce more Branches, if there be occasion for them to supply a Vacancy; but you must avoid crowding them with Branches, which is as injurious to these Plants as to Fruit-Trees; for if the Branches have not an equal Benefit of the Sun and Air, they will not produce their Flowers so strong, nor in so great Plenty as when they are more open and better expos'd to the Sun, so that the Air may circulate the more freely between them.

ROSA SINENSIS; *vide* *Ketmia Sinensis*.

ROSE THE GUILDER; *vide* *Opulus*.

ROSE-TREE; *vide* *Rosa*.

ROSEMARY; *vide* *Rosmarinus*.

ROSMARINUS; *Rosemary*.

The Characters are;

It is a verticillate Plant, with a labiated Flower, consisting of one Leaf, whose Upper-lip or Crest is cut into two Parts, and turns up backwards, with crooked Stamina (or Chives;) but the Under-lip (or Beard) is divided into three Parts, the middle Segment being hollow like a Spoon; out of the two or three-teethed Flower-cup rises the Pointal, attended as it were by four Embryo's, which afterwards turn to so many Seeds, that are roundish, and are inclos'd in the Flower-cup.

The Species are;

1. ROSMARINUS; *hortensis, latiore folio*. Mor. Hist. Broad-leav'd Garden *Rosemary*.

2. ROSMARINUS; *hortensis, angustiore folio*. C. B. P. Narrow-leav'd Garden *Rosemary*.

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3. ROSMARINUS; *striatus, five aureus*. Park. Theat. The Gold-strip'd Rosemary.

4. ROSMARINUS; *hortensis, angustiore folio, argenteus*. H. R. Par. The narrow-leav'd Silver-strip'd Rosemary.

5. ROSMARINUS; *Almeriensis, flore majore, spicato purpurascente*. Tourn. Rosemary of Almeria, with a large spiked purplish Flower.

6. ROSMARINUS; *spontaneus, folio eleganter variegato*. Boerh. Ind. Broad-leav'd Rosemary, with an elegant strip'd Leaf.

These Plants grow plentifully in the Southern Parts of France, in Spain and Italy, where, upon dry rocky Soils near the Sea, they thrive prodigiously; but notwithstanding they are produc'd in warm Countries, yet they are hardy enough to bear the Cold of our ordinary Winters very well in the open Air, provided they are planted upon a poor, dry, gravelly Soil; on which they will endure the Cold much better than upon a richer Soil, where the Plants will grow more vigorously in Summer, and so be more subject to Injury from Frost, and they will not have so strong an Aromatick Scent as those upon a dry barren Soil.

Those Sorts with strip'd Leaves are somewhat tender, and should either be planted near a warm Wall, or in Pots fill'd with light fresh Earth, and shelter'd in Winter under a Frame, otherwise they will be subject to die in frosty Weather.

All these Sorts may be propagated by planting Slips or Cuttings of them in the Spring of the Year, upon a Bed of a light fresh Earth; and when they are rooted, they may be transplanted into the Places where they are design'd to grow; but it will be proper to do this a-

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bout the Beginning of August, that they may take new Root before the frosty Weather comes on; for if they are planted too late in Autumn, they seldom live through the Winter, especially if the Weather proves very cold; so that if you do not transplant them early, it will be the better Method to let them remain unremoved until March following, when the Frost is over, observing never to transplant them at a Season when the dry East Winds blow, but rather defer the doing of it until the Season is more favourable; for if they are planted when there are cold drying Winds, they are apt to dry up their Leaves, and kill 'em: But if there happens to be some warm Showers soon after they are removed, it will cause 'em to take Root immediately; so that they will require no farther Care, but to keep them clear from Weeds.

Altho' these Plants are tender when planted in a Garden, yet when they are by Accident rooted in a Wall (as I have several times seen 'em) they will endure the greatest Cold of our Winters, though expos'd much to the cold Winds; which is occasioned by the Plant's being more stunted and strong, and their Roots being drier.

The Flowers of the narrow-leav'd Garden Sort are used in Medicine, as are also the Leaves and Seeds.

RUBIA; Madder.

The Characters are;

The Flower consists of one single Leaf, which is cut into four or five Segments, and expanded at the Top; the Flower-cup afterwards becomes a Fruit composed of two juicy Berries, closely joined together, containing Seed, for the most part hollowed

like

like a Navel; to which may be added, the Leaves being rough, and surrounding the Stalks in Whorles.

The Species are;

1. RUBIA; *Tinctorum sativa*. C. B. P. Cultivated Dyers Madder.

2. RUBIA; *sylvestris aspera, quæ sylvestris Dioscoridis*. C. B. P. Wild Madder.

3. RUBIA; *sylvestris, Monspefulana, major*. F. B. Great wild Madder of Montpelier.

The first of these Sorts was formerly cultivated in divers Parts of England, for the Dyers Use; but of late Years it has been wholly neglected, so that at present I believe there is scarce any of it cultivated, except in small Quantities for Medicinal Use: How this Plant came to be so much neglected in England I can't imagine, since it will thrive as well here as in any Country in Europe; and the Consumption of it in England is pretty large; for I have been informed, that we pay upwards of thirty thousand Pounds annually for this Commodity, which might be easily sav'd to the Nation, were it cultivated here. At present the greatest Quantity of it is cultivated in Flanders and Holland, from whence we are annually furnish'd with it, in three different Manners, and distinguish'd by the Names of Madder in the Branch, Madder in the Bundle, and Madder unbundled: The first Sort is brought to us in the Root, as it comes out of the Ground, without any other Preparation than that of being dried. The second Sort is that of Bunch Madder, or such as is made into Bundles, which is Madder in Branch, first freed from the Bark and the Pith, then ground by a Mill into gross Powder, as we buy it. The third Sort is the Madder unbundled,

that is, the Branched Madder, ground into Powder; but the bunched Madder, or that in Bundles is the best, which for its Excellency, when it is fresh, is made into Bales, or put up into Casks; 'tis of a pale Red, but as it grows older, increases its Colour to a fine Red; that of Zealand is esteem'd the best for the Dyers Use.

In the Year 1727, I observed a great Quantity of this Plant cultivated in Holland, between Helvoetsluyce and the Brill, and it being the first Time I had ever seen any considerable Parcel of it, I was tempted to make some Enquiries about its Culture, and take some Minutes of it down upon the Spot, which I shall here insert, for the Use of such as may have Curiosity to attempt the Culture of it.

In Autumn they plough the Land, where they intend to plant Madder in the Spring, and lay it in high Ridges, that the Frost may mellow it; in March they plough it again, and at this Season they work it very deep, laying it up in Ridges eighteen Inches asunder, and about a Foot deep; then about the Beginning of April, when the Madder will begin to shoot out of the Ground, they open the Earth about their old Roots, and take off all the Side-shoots which extend themselves horizontally, just under the Surface of the Ground, preserving as much Root to them as possible: These they transplant immediately upon the Tops of the new Ridges, at about a Foot apart, observing always to do this when there are some Showers, because then the Plants will take Root in a few Days, and will require no Water.

When the Plants are growing, they carefully keep the Ground hoed, to prevent the Weeds from coming up between them, for if

they are smothered by Weeds, especially when young, it will either destroy or weaken them so much, that they seldom do well after. In these Ridges they let the Plants remain two Seasons, during which Time they keep the Ground very clean, and at *Michaelmas*, when the Tops of the Plants are decay'd, they take up the Roots, and dry them for Sale. This is what I could learn of their Method of cultivating this Plant, to which I will subjoin a few Observations of my own, which I have since made upon the Culture of *Madder* in *England*. And, first, I find there is no Necessity for laying the Ground up in Ridges in *England*, as is practis'd by the *Dutch* (especially in dry Land) because the Places where I saw it, were very wet Land, which is often floated in *Winter*; so that if the Plants were not elevated upon Ridges, their Roots would rot in *Winter*. Secondly, They should be planted at a greater Distance in *England*, the Rows should be at least three Feet Distance, and the Plants eighteen Inches asunder in the Rows; for as they extend themselves pretty far under-ground, so where they are planted too near, their Roots will not have Room to grow. And, thirdly, I find, that if all the horizontal Roots are destroy'd from time to time, as they are produced, it will cause the large downright Roots to be much bigger, in which the Goodness of this Commodity chiefly consists: For if the upper Roots are suffered to remain, they will draw off the principal Nourishment from the downright Roots, as I have experienced; for I planted a few Roots upon the same Soil and Situation, which were of equal Strength, and rooted equally well; half of these

I hoed round, and cut off the horizontal Roots, and the other half I permitted the horizontal Roots to remain on; and when I took them all up, those which I had hoed about and kept clear from horizontal Roots, were almost as large again as the other, and the Roots were double the Weight; which plainly proves it necessary to cut off those superficial Roots.

The Manner of drying and preparing these Roots for Use, I am not acquainted with, having never had an Opportunity of seeing that Part, so can give no Instructions concerning it; but whoever shall have Curiosity enough to cultivate this useful Plant, might easily inform themselves, by going over to *Holland* at the Season of taking up the Roots.

The two Sorts of *Wild Madder* are of no Use; though their Roots seem to be of the same Quality with the manured Sort; and as they are never cultivated in Gardens, it is needless to say any thing more of them in this Place.

These Plants love a loose Soil, neither too dry nor over wet, but will do better in a dry than on a wet Soil, because in such Places the Roots are apt to rot in *Winter*.

RUBUS; The Bramble or Raspberry-bush.

The Characters are;

It hath a Flower consisting of five Leaves, which are placed circularly, and do expand in form of a Rose; the Flower-cup is divided into five Parts, containing many Stamina, or Chives, in the Bosom of the Flower, in the Center of which rises the Pointal, which afterwards becomes the Fruit, consisting of many Protuberances, and full of Juice.

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The Species are;

1. RUBUS; *major, fructu nigro*.
 7. B. The common Bramble or Black-berry-bush.

2. RUBUS; *minor, fructu caruleo*.
 7. B. The Dewberry-bush, or Lesser Bramble.

3. RUBUS; *vulgaris, major, fructu albo*. *Raii Syn.* The common Greater Bramble-bush with white Fruit.

4. RUBUS; *vulgaris, major, folio eleganter variegato*. The greater Bramble-bush with a beautiful strip'd Leaf.

5. RUBUS; *Idaeus, spinosus, fructu rubro*. 7. B. The Raspberry-bush, Framboise, or Hind-berry.

6. RUBUS; *Idaeus, spinosus, fructu albo*. 7. B. The Raspberry-bush with white Fruit.

7. RUBUS; *Idaeus, spinosus, fructu rubro, serotino*. The Raspberry-bush with late red Fruit.

8 RUBUS; *Idaeus, non spinosus*. 7. B. The Raspberry-bush without Thorns.

9. RUBUS; *Idaeus, fructu nigro, Virginianus*. *Banister*. The Virginian Raspberry-bush with black Fruit.

10. RUBUS; *odoratus, Cornut*. *Virginian flowering Raspberry; vulgô*.

11. RUBUS; *Americanus, magis erectus, spinis rarioribus, stipite caruleo*. *Pluk. Alm.* The upright Pennsylvania Bramble, or Raspberry-bush.

12. RUBUS; *Alpinus, humilis*. 7. B. Dwarf Bramble of the Alps.

The first and second Sorts are very common in Hedges, and upon dry Banks in most Parts of England, and are rarely cultivated in Gardens. The third Sort was found by Mr. Jacob Bobart in a Hedge not far from Oxford, and hath since been cultivated in several Gardens as a Curiosity. This does not only differ from the common Bramble in the Colour of the

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Fruit, but also in the Colour of the Bark and the Leaves, which in this Sort are of a lively Green; whereas those of the common Sort are of a dark brown Colour. The fourth Sort is a Variety of the common Bramble, differing therefrom only in having strip'd Leaves, for which it is preserv'd by some Persons who are curious in collecting variegated Plants.

The Raspberry-Bush is also very common in divers Woods in the Northern Counties of England, but is cultivated in all curious Gardens for the Sake of its Fruit. Of this there are three Kinds, which are cultivated commonly in the Gardens near London; which are the common Red, late Red, and the White Sorts; but the Sort without Thorns is less common at present than the other.

The ninth, tenth, eleventh and twelfth Sorts are preserv'd as Curiosities in several Gardens near London; but as their Fruits are of no Value, so they are scarcely worth cultivating, except in Botanick Gardens for Variety.

All these Plants are easily propagated by Suckers, which they send from the Roots in great Plenty. The best Time to take them off, and transplant them, is in October, that they may take good Root before Winter, which will cause them to be strong, and produce Fruit the succeeding Summer.

In preparing these Plants, their Fibres should be shorten'd; but the Buds which are plac'd at a small Distance from the Stem of the Plant, must not be cut off, because those produce the new Shoots the following Summer. These Plants should be planted about two Feet asunder in the Rows, and four or five Feet Distance Row from Row;

for if they are planted too close, their Fruit is never so fair, nor will ripen so kindly as when they have Room for the Air to pass between the Rows. The Soil in which they thrive best, is a fresh, sandy Loam, neither too moist nor over dry, the Extreme of either being injurious to these Plants.

The Time for dressing of them is in October, when all the old Wood, which produc'd Fruit the preceding Summer, should be cut out down to the Surface of the Ground, and the young Shoots must be shorten'd to about two Feet in Length; then the Spaces between the Rows should be well dug to encourage their Roots; and if you bury a very little rotten Dung therein, it will make them shoot vigorously the Summer following, and their Fruit will be much fairer. During the Summer Season they should be kept clear from Weeds, which, with the before-mention'd Culture, is all the Management they will require: But it is proper to make new Plantations once in three or four Years, because those are better than such Plants as are suffer'd to remain longer.

All the other Sorts are propagated from Suckers in the same Manner as the Garden Raspberries, and are equally hardy, so that they may be placed in the open Air in any Part of the Garden, provided it be not over-moist, which is apt to rot the Roots of some Sorts in Winter, but especially of the *Canada* Sort, which is apt to perish if planted in a very wet Soil.

RUSCUS; Knee-Holly or Butchers-Broom.

The Characters are;

The Flower-cup consists of one Leaf, which is cut into several Divisions,

out of which is produced a globular Bell-shap'd Flower, consisting also of one Leaf, in the Center of which rises the Pointal, which afterwards becomes a soft roundish Fruit, in which is inclos'd one or two hard Seeds.

The Species are;

1. RUSCUS; *myrtifolius, aculeatus*. Tourn. The common Knee-Holly or Butchers-Broom.

2. RUSCUS; *angustifolius fructu folio innascente*. Tourn. Narrow-leav'd Butchers-Broom or Alexandrian Laurel, with the Fruit growing on the Leaves.

3. RUSCUS; *latifolius, fructu folio innascente*. Tourn. Broad-leav'd Butchers-Broom or Alexandrian Laurel, with the Fruit growing on the Leaves.

4. RUSCUS; *angustifolius, fructu summis ramulis innascente*. Tourn. Narrow-leav'd Butchers-Broom or Alexandrian Laurel, with the Fruit growing upon the Tops of the Branches.

5. RUSCUS; *latifolius, foliorum sinu florifer & fructifer*. H. El. Broad-leav'd Alexandrian Laurel, with the Fruit growing upon the Edges of the Leaves.

The first Sort is very common in the Woods in divers Parts of England, and is rarely cultivated in Gardens. The Roots of this Kind are sometimes used in Medicine, and the green Shoots are cut, and bound into Bundles, and sold to the Butchers, who use it as Besoms to sweep their Blocks; from whence it had the Name of *Butchers-Broom*.

The second, third, and fourth Sorts are hardy Plants, and tho' not Natives of England, yet may be preserv'd in Gardens, if planted in a shady Situation, as in Wilderness-Quarters, &c. where they serve to intermix with other Wood Plants to make Variety; and the third Sort

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Sort is sometimes used in Medicine. These Plants may be propagated by parting their Roots in the Spring of the Year, before they begin to make new Shoots, observing, if the Season be dry, to water them until they have taken Root; after which they will require no farther Care but to keep them clear from Weeds, observing not to transplant or disturb their Roots oftner than once in three or four Years; for when they are often removed, they seldom thrive well, and do rarely produce Fruit.

The fifth Sort is tender, and must therefore be plac'd in Pots fill'd with fresh Earth, and in Winter put into the Green-house; but it should be plac'd where it may have free Air in mild Weather, and be constantly water'd: In which Management, this Plant will send forth Stems six or eight Feet high, furnish'd with Leaves from bottom to top, which in June will be closely set with Flowers upon their Edges, which do make a very beautiful and odd Appearance, and renders it worthy of a Place in every good Collection of Plants. This is also propagated by parting the Roots, as the former, which should not be done very often, because if the Roots are not permitted to remain some time to get Strength, they will produce but weak Shoots, and very few Flowers; and in the Strength of their Shoots, and Number of Flowers the greatest Beauty of these Plants consists.

It is generally suppos'd, that it was one of these Plants which the antient Victors were crown'd with; and from the Pliableness of their Branches, whereby they are very proper to wreath into any Figure, and from the Resemblance those

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Coronets, which we see surrounding the Heads of some antient Busts, have to the Leaves of these Plants; it is a probable Conjecture at least.

RUTA; Rue.

The Characters are;

The Flower for the most Part consists of four hollow Leaves, which are plac'd orbicularly, and do expand in form of a Rose; out of whose Flower-cup rises the Pointal, which afterwards becomes a roundish Fruit, which is generally four-corner'd, and compos'd of four Cells fix'd to an Axis, and full of small angular Seeds.

The Species are;

1. RUTA; *major, hortensis, latifolia*. Mor. Hist. The common broad-leav'd Garden Rue.

2. RUTA; *hortensis, minor, tenuifolia*. Mor. Hist. The lesser Garden Rue, with narrow Leaves.

3. RUTA; *hortensis, minor, tenuifolia, foliis variegatis argenteis*. Boerh. Ind. The lesser Garden Rue, with narrow Leaves, variegated with White.

4. RUTA; *Chalepensis, latifolia, florum petalis villis scatentibus* H. L. The broad-leav'd Aleppo Rue, whose Flower-leaves are beset with Down.

5. RUTA; *Chalepensis, tenuifolia, florum petalis villis scatentibus*. Mor. Hist. Narrow-leav'd Aleppo Rue, whose Flower-leaves are beset with Down.

6. RUTA; *sylvestris, major*. C. B. P. Greater Wild Rue.

There are some other Varieties of these Plants which are preserv'd in curious Botanick Gardens, but those here mention'd are all the Sorts which I have seen cultivated in the English Gardens.

The first Sort here mention'd, is that which the College of Physicians have directed to be used in Medicine,

Medicine, and is the most commonly cultivated in *England*.

The second Sort is propagated but in few Gardens in *England*; tho' the third, which is a Variety of the second, and only differing from it in having its Leaves variegated with White, is very common in *England*, being greatly cultivated by those Gardeners who supply the *London* Markets with Plants in the Spring Season, at which Time this Plant makes a beautiful Appearance; but as the Season advances, and the Plants increase in Vigour, so the Variegation of the Leaves goes off, and they appear almost green, but their Colour returns again in Winter.

The two Sorts of *Aleppo Rue* are only preserv'd in some curious Gardens, being rarely used in Medicine; though, of late Years, the broad-leav'd Sort was become so plenty, as to be brought to the Markets instead of the first Sort: But it being much ranker, and of a more offensive Smell, it was neglected.

The greater Wild *Rue* is less common in *England* than either of the former. This I rais'd from Seeds, which were sent me by my Honoured Friend Mr. *Henry Hopkey*, from *Gibraltar*, where this Plant grows upon the Hills in great Plenty.

All these Plants may be propagated either by sowing of their Seeds, or by planting Slips or Cuttings, both of which must be done in the Spring. The Manner of propagating them from Cuttings being the same with *Rosemary*, &c. I shall not repeat it here, but refer the Reader to that Article; and if they are propagated by Seeds, there needs no farther Care but to dig a Bed of

fresh Earth in the Spring, making it level; then to sow the Seeds thereon, treading them in, and raking the Ground smooth: After which you must observe to keep the Bed clear from Weeds until the Plants are come up about two Inches high; when they should be transplanted out into fresh Beds, where they may remain for Use. All these Plants must have a dry Soil, otherwise they are very subject to be destroy'd in Winter. The two *Aleppo Rues*, and the Wild *Rue* are somewhat tenderer than the common Sort; but these will endure our ordinary Winters very well in the open Air, especially if they are planted on a dry Soil.

These Plants were formerly used to plant for Edgings on the Sides of Borders; but they are by no means proper for this Use, for they shoot so vigorously that there is no keeping them within the Bounds of an Edging; besides, when they are kept closely shear'd they appear very ragged and stumpy, and their Roots do spread so far, as to exhaust the Goodness of the Soil, so that the other Plants would be depriv'd of their Nourishment; which Reasons have caus'd them to be wholly neglected for this Purpose; so that, at present, they are chiefly cultivated for Medicinal Use, or to furnish the Balconies of the Citizens in the Spring.

RUTA MURARIA; Wall-Rue or White Maidenhair.

This Plant is found growing out of the Joints of old Walls in divers Parts of *England*, where it is gathered for Medicinal Use; but as it can't be cultivated in Gardens, so as to grow to Advantage, I shall not say any thing more of it in this Place.



SABINA; The Savine-Tree.

The Characters are;

It hath compact, rigid, and prickly Ever-green Leaves; the Fruit is small, spherical, and warted, and the whole Plant has a very rank, strong Smell.

The Species are;

1. SABINA; *folio Tamarisci*, Dioscoridis. C. B. P. The Male or common Savin.

2. SABINA; *folio Cypressi*. C. B. P. The Berry-bearing or Upright Savin.

3. SABINA; *foliis variegato*. The Strip'd Savin.

These Plants are commonly cultivated for Medicinal Use; and are rarely planted in Gardens for Pleasure, because their ill Scent renders them disagreeable in frequented Places; but yet they may be admitted for planting in Clumps, or to form Amphitheatres of Ever-green Trees; where if these are intermix'd amongst other low-growing Plants, they will add to the Variety.

These Plants may be propagated by laying down their young Branches in the Spring; which if duly water'd in dry Weather, will take Root in a Year's time, and may then be transplanted out either into a Nursery, or the Places where they are to remain: They may also be propagated by Cuttings, which should be planted on a moist Soil, about the Beginning of April, which, if duly water'd, will take Root; and the Spring following

may be remov'd, as was directed for the Layers.

The Time for transplanting these Plants is the same with most other Ever-green Trees, (*viz.*) in April; observing to do it in cloudy Weather, laying a little Mulch upon the Surface of the Ground about their Roots to prevent their drying: After they are rooted, they will require no farther Care but to keep them clear from Weeds, and to dig the Ground about their Roots every Spring, which will greatly promote their Growth.

SAFFRON; *vide* Crocus.

SAGE; *vide* Salvia.

SALICARIA; Willow-wort or spiked Lose-strife.

The Characters are;

The Flowers consist of several Leaves, which are plac'd circularly, and do expand in form of a Rose; these Leaves are produc'd from the Incisures of the Flower-cup; from the Center of the Flower-cup rises the Pointal, which afterwards becomes a Fruit or oval Husk, consisting of two Cells, and generally full of small Seeds, which adhere to the Placenta, and are commonly wrapped up in the Flower-cup.

The Species are;

1. SALICARIA; *vulgaris, purpurea, foliis oblongis*. Tourn. Purple-spiked Willow-herb or Lose-strife, with long Leaves.

2. SALICARIA; *purpurea, foliis subrotundis*. Tourn. Purple-spiked Willow-herb or Lose-strife, with roundish Leaves.

These Plants are very common by the Sides of Ditches and other moist Places in divers Parts of England, and are rarely cultivated in Gardens; yet for the Beauty of their long Spikes of purple Flowers, they deserve a Place in a good Garden, as also for their long Continuance

tinuance in Flower: However, if there happens to be a moist boggy Place in a Garden where few other Plants will thrive, these may be plac'd there to Advantage, and will afford a great deal of Pleasure. They propagate themselves very fast by their creeping Roots, so that if they delight in the Soil, they will, in a short time, multiply exceedingly. These produce their Flowers in June and July, and do often continue till August in Beauty.

SALIX; The Sallow or Willow-Tree.

The Characters are ;

It hath amentaceous Flowers, consisting of several Stamina, which are collected into a Spike, but are barren; the Embryo's are produc'd upon different Trees from the Male Flowers, and do afterwards become a Fruit or Husk, shap'd like a Cone, opening in two Parts, and containing downy Seeds.

The Species are ;

1. SALIX; *vulgaris, alba, arborescens*. C. B. P. The common White Willow.

2. SALIX; *folio laureo, seu lato glabro odorato*. Phyt. Brit. The Bay-leav'd sweet Willow.

3. SALIX; *folio longo, utrinque virente odorato*. The long-leav'd Sweet Willow.

4. SALIX; *folio longo, latoque, splendente, fragilis*. Raii Syn. The Crack Willow.

5. SALIX; *folio Amygdalino, utrinque aurito, corticem abjiciens*. Raii Syn. The Almond-leav'd Willow, that casts its Bark.

6. SALIX; *folio auriculato, splendente, flexilis*. Cat. Cant. The round-ear'd shining Willow.

7. SALIX; *folio longo, sublateo, non auriculato, viminibus luteis*. Raii

Syn. The long-leav'd yellowish Willow.

8. SALIX; *latifolia, rotunda*. C. B. P. Round-leav'd Sallow.

9. SALIX; *latifolia, rotunda, variegata*. The Striped Sallow.

10. SALIX; *latifolia, folia splendente*. Raii Syn. Broad shining-leav'd Sallow.

11. SALIX; *orientalis, flagellis deorsum, pulchre pendentibus*. T. Cor. The Weeping Willow.

There are a greater Number of Species to be found in England than are here mentioned, especially of the Sallows, as I have been inform'd by a very judicious Basket-maker: There are at least thirty Sorts, which they distinguish by Name, commonly in use in their Trade; and besides these, there are a great Number of Mountain Willows which grow upon dry Grounds; but as these are seldom cultivated, so it would be to little Purpose to enumerate them in this Place.

All the Sorts of Willows may be easily propagated by planting Cuttings or Sets in the Spring, which do readily take Root, and are of quick Growth. Those Sorts which grow to be large Trees, and are cultivated for their Timber, are generally planted from Sets, which are about seven Feet long: These are sharpen'd at their larger End, and thrust into the Ground by the Sides of Ditches and Banks where the Ground is moist; in which Places they make a considerable Progress, and are a great Improvement to such Estates, because their Tops will be fit to lop every third or fourth Year. The larger Wood, if found, is commonly sold for making Wooden Heels, or Soles for Shoes, as also to the Turners for many Kinds of light Ware.

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The *Sallows* are commonly planted in Cuttings, made from strong Shoots of the former Year and are about three Feet long: These are commonly thrust down two Feet deep into the Ground, and are one Foot above it. The Soil should always be dug or plough'd before they are planted, and the Cuttings plac'd about three Feet Row from Row, and eighteen Inches asunder in the Rows, observing always to place the Rows the sloping Way of the Ground, (especially if the Tides overflow the Place) because if the Rows are plac'd the contrary Ways, all the Weeds and Filth will be detain'd by the Plants, which will choak 'em up. The best Season for planting these Cuttings is in *February*, for if they are planted sooner, they are apt to peel, if it proves hard Frost, which greatly injures them. These Plants are always cut every Year, and if the Soil be good they will produce a great Crop; so that the yearly Produce of one Acre has been often sold for fifteen Pounds, but ten Pounds is a common Price, which is much better than Corn Land: so that it is great Pity these Plants are not more cultivated, especially upon moist boggy Soils, upon which few other Things will thrive.

SALVIA; Sage.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Upper-lip is sometimes arched, and sometimes hooked; but the Under-lip (or Beard) is divided into three Parts, bunching out, and not hollow'd as the Clary; out of the Flower-cup rises the Pointal, attended, as it were, by four Embryo's, which afterwards become so many Seeds, which are roundish, shut up

in a Husk, which was before the Flower-cup: To which may be added That the Stamina do somewhat resemble the Os Hyoidis.

The Species are;

1. SALVIA; *major, an Sphacelae Theophrasti*. C. B. P. The greater or common Sage.
2. SALVIA; *nigra*. C. B. P. Common Red Sage.
3. SALVIA; *major, foliis ex viridi & albo variegatis*, Boerb. Ind. The greater Sage, with Leaves variegated with White and Green.
4. SALVIA; *foliis versicoloribus*. C. B. P. Party-colour'd Sage.
5. SALVIA; *latifolia, serrata*. C. B. P. Broad-leav'd notch'd Sage.
6. SALVIA; *latifolia, serrata, foliis ex albo variegatis*. Broad-leav'd Sage, with variegated Leaves.
7. SALVIA; *absinthium, redolens*. J. B. Wormwood Sage.
8. SALVIA; *minor, aurita, & non aurita*. C. B. P. Sage of Virtue.
9. SALVIA; *minor, foliis variegatis*. H. R. Par. Sage of Virtue, with strip'd Leaves.
10. SALVIA; *Orientalis, latifolia, absinthium redolens, flore carneo magno*. Boerb. Ind. Broad-leav'd Eastern Sage, smelling like Wormwood, with a large Flesh-colour'd Flower.
11. SALVIA; *Orientalis latifolia, hirsutissima, viscosa, pinnata, flore & calice purpureis, inodora*. Boerb. Ind. Eastern Sage, with broad, hairy, clammy-winged Leaves, with a purple Flower and Flower-cup, without Smell.
12. SALVIA; *Africana, frutescens, folio scorodonia, flore violaceo*. H. A. Shrubby African Sage, with a Wood Sage Leaf, and a Violet-colour'd Flower.
13. SALVIA; *Africana, frutescens, folio subrotundo, glauco, flore aureo magno*.

magno. H. A. Shrubby African Sage, with roundish Sea-green Leaves, and a large Golden-Flower.

14. *SALVIA; Orientalis, absinthium redolens, foliis pinnatis, flore carneo elatior. Sher.* Eastern Upright Wormwood-Sage, with winged Leaves and a Flesh colour'd Flower.

15. *SALVIA; Hispanica, folio lavenderula. Town.* Spanish Sage, with a Lavender-leaf.

There are several other *Species* of this Plant which are preserv'd in some curious *Botanick* Gardens abroad; but those here mention'd are what I have observ'd in the *English* Gardens.

The first Sort, tho' the most common in many Parts of *Europe*, yet is but rarely to be seen in the *English* Gardens; but the red Sort is most commonly cultivated in this Country, which many Persons suppose to be only a Variety of the common Sort; but it constantly preserves its Difference when rais'd from Seeds, as I have two or three times experimented; so that I don't scruple to make it a distinct *Species*, since its Difference from the common is much greater than in some of the other Sorts of *Sage*, particularly the *Sage of Virtue*, and the *Lavender-leav'd Sage*; both which, when cultivated in a good Soil, are so nearly alike, as not to be distinguish'd by the best *Botanists*. This *Red Sage*, the *Wormwood Sage*, and *Sage of Virtue*, are the principal Sorts which are cultivated for Use in *England*; tho' the *broad-leav'd Sage* is much preferable to the *Sage of Virtue* for *Tea*, it giving the Water a much more grateful Flavour, and is esteem'd to be of a less drying Quality; so that most Persons who are Lovers of *Sage-Tea*, do prefer this for that Purpose.

All the Sorts of *Sage* (except the eleventh Sort, which is but annual) may be propagated by planting Cuttings or Slips, during any of the Summer Months, observing to water and shade them until they have taken Root; after which they may be taken up, and planted where they are design'd to remain, which should always be upon a dry Soil, and where they may have the Benefit of the Sun; for if they are planted on a moist Soil, or in a shady Situation, they are very subject to be destroy'd in Winter; nor will these Plants endure the Cold so well when planted upon a rich Soil, as those which have a barren, dry, rocky Soil, which is the Case of most of the *Verticillate* Plants. The Side-shoots and Tops of these Plants may be gather'd in the Summer, and dry'd, if design'd for *Tea*, otherwise they are best taken green from the Plants for most other Uses.

The twelfth, thirteenth, and fourteenth Sorts are somewhat tender, therefore these must be planted into Pots fill'd with fresh, light, sandy Earth; and in Winter must be remov'd into the Conservatory, where they should be plac'd as near the Windows as possible, that they may have a great Share of fresh Air whenever the Season is mild; for if they are too much drawn, they seldom flower well, and make but an indifferent Appearance: In Summer they must be expos'd amongst other *Exotick* Plants in some well-shelter'd Situation, for they are pretty hardy, and do only require to be shelter'd from Frost and strong Winds. These Plants must be often refresh'd with Water, (especially in warm Weather) otherwise they will shrivel and decay; and they should be transplanted at least

least twice every Summer, because their Roots do greatly increase; which, if confin'd in the Pots too long, will turn mouldy, and decay. The other Oriental Sorts are hardy enough to endure the Cold of our ordinary Winters in the open Air, provided they are planted in a dry Soil, and a warm Situation.

These Plants may also be propagated by sowing their Seeds in the Spring upon a Bed of fresh Earth, observing to keep the Ground clear from Weeds until the Plants are come up; when they should be transplanted into Beds of fresh Earth, and treated as those rais'd from Cuttings or Slips.

SALVIA AGRESTIS; *vide Scordium.*

SAMBUCUS; The Elder-Tree.

The Characters are;

The Branches are full of Pith, having but little Wood; the Flowers are monopetalous, divided into several Segments, and expand in Form of a Rose; these are for the most Part collected into an Umbel, and are succeeded by soft succulent Berries, having three Seeds in each.

The Species are;

1. **SAMBUCUS;** *fructu in umbellâ nigro.* C. B. P. Common Elder, with black Berries.

2. **SAMBUCUS;** *fructu in umbellâ viridi.* C. B. P. Common Elder, with greenish Berries.

3. **SAMBUCUS;** *fructu albo.* Lob. The white-berry'd Elder.

4. **SAMBUCUS;** *racemosa rubra.* C. B. P. The Mountain red-berry'd Elder.

5. **SAMBUCUS;** *laciniato folio.* C. B. P. The Cut or Parsley-leav'd Elder.

6. **SAMBUCUS;** *vulgaris, foliis ex luteo variegatis.* The blotch'd-leav'd Elder.

7. **SAMBUCUS;** *humilis, sive Ebnus.* C. B. P. Dwarf-Elder or Dancwort.

The first of these Trees is very common in the Hedges in most Parts of England, but the second and third Sorts are more rare; these are propagated for the Sake of their Berries, which are by some Persons used for making Wine, and for other Purposes. The fourth Sort is less common in England than either of the former, it being only to be found in some curious Gardens at present. The fifth and sixth Sorts are preserved for the Variety of their Leaves, by such as are curious in collecting the various Kinds of Trees and Shrubs.

All these Sorts may be easily propagated from Cuttings, or by sowing their Seeds; but the former being the most expeditious Method, is generally practis'd. The Time for planting of their Cuttings is any time from September to March, in the doing of which there needs no more Care than to thrust the Cuttings about six or eight Inches into the Ground, and they will take Root fast enough; and may afterwards be transplanted where they are to remain; which may be upon almost any Soil or Situation; they are extream hardy, and if their Seeds are permitted to fall upon the Ground, they will produce a Plenty of Plants the succeeding Summer.

These Trees are often planted for making Fences, because of their quick Growth, but as their Bottoms become naked in a few Years, so they are not so proper for that Use; neither would I recommend them to be planted near Habitations, because at the Season when they are in Flower, they emit such a strong Scent, as will occasion violent

Violent Pains in the Heads of those who abide long near 'em; besides, the crude Parts which are continually perspired through their Leaves are accounted unwholesome, though the Leaves, Bark, and other Parts are greatly esteemed for many Uses in Medicine.

The *Dwarf-Elder* is found wild in some Counties of *England*, but near *London* it is propagated in Gardens for Medicinal Use; though very often the Herb-women in the Markets do give the tender Shoots of the *Elder Tree* instead of this, to such Persons as can't distinguish them asunder.

This Plant multiplies exceeding fast by its creeping Root, which, if permitted to run, will soon overspread a large Spot of Ground; the Off-sets of these Roots may be transplanted any time from *September* to *March*, and will grow in any Soil or Situation, but should be allowed Room to spread, for if they are planted near other Plants, they will over-run and destroy them.

SANGUIS DRACONIS; vide Palma.

SANICULA; Sanicle.

The Characters are;

It is an umbelliferous Plant, whose Flower consists of five Leaves placed orbicularly, but are generally bent back to the Center of the Flower, resting on the Empalement, which becomes a Fruit compos'd of two Seeds, that are gibbous and prickly on one Side, but plain on the other; some of the Flowers are always barren.

There is but one Species of this Plant at present in *England*, viz.

SANICULA; officinarum. C. B. P. Sanicle or Self-heal.

This Plant is found wild in Woods and shady Places in most

Parts of *England*, but being a Medicinal Plant may be propagated in Gardens for Use: It may be increased by parting of the Roots, any time from *September* to *March*, but it is best to do it in *Autumn*, that the Plants may be well rooted before the dry Weather in *Spring* comes on: They should have a moist Soil and a shady Situation, in which they will thrive exceedingly.

SANTOLINA; Lavender Cotton.

The Characters are;

It hath a globose flosculous Flower, consisting of many Florets, divided into several Segments, sitting on the Embryo, contained in the intermediate little Leaves, hollowed like a Gutter, and a squamous hemispherical Empalement; the Embryo afterwards becomes a Seed, not at all furnish'd with Down. To these Notes must be added, larger Flowers than those of *Wormwood* and *Southernwood*, and also the whole Face of the Plant.

The Species are;

1. SANTOLINA; foliis seretibus. Tourn. Common Lavender Cotton.

2. SANTOLINA; flore majore, foliis villosis & incanis. Tourn. Lavender Cotton, with a larger Flower and hoary Leaves.

3. SANTOLINA; foliis Erice vel Sabine. Tourn. Green-leav'd Lavender Cotton, with a Scent like Ointment.

4. SANTOLINA; foliis Cypress. Tourn. Cypress-leav'd Lavender Cotton.

5. SANTOLINA; repens & canescens. Tourn. Creeping and hoary Lavender Cotton.

6. SANTOLINA; foliis minus incanis. Tourn. Lavender Cotton, with less hoary Leaves.

7. SANTOLINA; foliis obscure viridibus, flore aureo. Tourn. Laven-

der Cotton, with dark-green Leaves and a Golden Flower.

8. SANTOLINA; *foliis Rosimarini major*. Tourn. Greater Lavender Cotton, with Rosemary Leaves.

9. SANTOLINA; *vermiculata*, *Cretica*. Tourn. Vermiculated Lavender Cotton of Candia.

The first of these Plants is cultivated in Gardens for Medicinal Use; as is the third, for furnishing Balconies, and other little Places in and near the City, by way of Ornament; but the other Sorts are rarely to be found, but in the Gardens of those who are curious in Botanical Studies.

Most of these Plants may be cultivated so as to become Ornaments to a Garden, particularly in small Bosquets of ever-green Shrubs, where, if these are artfully intermix'd with other Plants of the same Growth, and placed in the front Line, they will make an agreeable Variety; especially if Care be taken to trim them twice in a Summer, to keep them within Bounds; otherwise their Branches are apt to straggle, and in wet Weather to be born down and displaced, which renders them unsightly; but when they are kept in Order, their hoary and different colour'd Leaves will have a pretty Effect in such Plantations.

These Plants may be propagated by planting Slips or Cuttings of any of the Kinds, during the Spring, which should be put into a Border of light fresh Earth, and watered and shaded in hot dry Weather, until they have taken Root, after which they will require no farther Care, but to keep them clear from Weeds, 'till *August*, when they should be carefully taken up and transplanted where they are design'd to remain: But if the Ground is not ready by

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that Time to receive 'em, it will be proper to let them remain in the Border until Spring; for if they are transplanted late in Autumn, they are liable to be destroy'd by a little Cold in Winter.

These Plants are very hardy, and if planted in a lean, gravelly, or sandy dry Soil, will continue many Years, and resist the Cold very well; but if they are in a wet or rich Soil, they are often destroy'd in Winter.

SAPONARIA; *vide* Lychnis.

SATUREJA; Savory.

The Characters are;

It is a Plant of the verticillate Kind, with a labiated Flower, whose Upper-lip, or Crest, is divided into two Parts; but the Lower-lip, or Beard, is divided into three Parts, the middle Part being crenated: These Flowers are produced from the Wings of the Leaves, in a loose Order, and not in Whorles or Spikes, as are most of this Tribe of Plants.

The Species are;

1. SATUREJA; *sativa*. J. B. Garden or Summer Savory.

2. SATUREJA; *montana*. C. B. P. Winter Savory.

3. SATUREJA; *Virginiana*. Par. Bat. Virginian Savory.

The first of these Plants is annual, and is propagated by sowing of the Seeds upon a Bed of light, fresh Earth, in *March*; and when the Plants are come up, they must be transplanted into other Beds, placing them about four or five Inches asunder each Way; observing to do this in moist, cloudy Weather, because at such Times the Plants will soon take Root; but if the Season should prove hot and dry; they must be diligently water'd until they have taken Root, after which they will require no farther Care, but to keep 'em clear from Weeds; and in *July* they will flower, at

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which Time they should be cut for medicinal Use; but those Plants which are left will produce ripe Seeds in September, provided the Autumn be favourable.

The *Winter Savory* is an abiding Plant, and may be propagated by Slips or Cuttings, which, if planted in a Bed of light, fresh Earth, in the Spring, and carefully watered, will take Root in a short Time, and may then be transplanted where they are to remain. This Plant should have a dry Soil, in which it will endure the Cold very well, as may be seen by its growing in some Places upon the Tops of Walls, where it defies the severest Cold of our Climate.

These Plants were formerly more cultivated in *England* than at present, they being very little in use to what they were formerly, when they enter'd most Dishes of Soups, &c. but at present they are very little used in the Kitchen, and are chiefly cultivated for medicinal Use.

SATYRION; *vide* Orchis.

SAVIN; *vide* Sabina.

SAVORY; *vide* Satureja.

SAXIFRAGA; Saxifrage.

The Characters are;

The Flower consists of several Leaves, placed orbicularly, which expand in Form of a Rose out of whose multifid Flower-cup rises the Pointal, which commonly ends in two Horns, and afterwards turns, together with the Flower-cup, into a roundish Fruit, which has likewise two Horns, and two Cells, which are full of small Seeds.

The Species are;

1. SAXIFRAGA; *rotundifolia, alba*.
C. B. P. White round-leav'd Saxifrage.

2. SAXIFRAGA; *rotundifolia, alba, flore pleno*. Boerb. Ind. White round-

leav'd Saxifrage, with a double Flower.

3. SAXIFRAGA; *Alpina, ericoides, flore caruleo*. Tourn. Mountain Heath-like Sengreen with a blue Flower.

4. SAXIFRAGA; *sedi folio, flore albo, multiflora*. Tourn. Many-flower'd Saxifrage, with a Houseleek Leaf and a white Flower, commonly called Pyramidal Sedum.

5. SAXIFRAGA; *sedi folio, angustiore, serrato*. Tourn. Saxifrage, with a narrow, serrated, Houseleek Leaf.

The first of these Plants is very common in moist Meadows, in divers Parts of *England*, and is rarely cultivated in Gardens. This is what the College of Physicians have directed to be used in Medicine, under the Title of *White Saxifrage*, to distinguish it from *Meadow Saxifrage*, which is an umbelliferous Plant, of a very different Nature and Appearance from this.

The second Sort is a Variety of the first, which was found wild by Mr. Joseph Blind, Gardener at *Barns*, who transplanted it into his Garden, and afterwards distributed it to several curious Persons; since which Time it hath been multiplied so much, as to become a very common Plant in most Gardens near *London*, where it is commonly planted in Pots to adorn Court-yards, &c. in the Spring.

This Plant is propagated by Offsets, which are sent forth from the old Roots in great Plenty. The best Season for transplanting them is in *July*, after their Leaves are decay'd, when they must be put into fresh undung'd Earth, and placed in the Shade until Autumn; but in Winter they may be exposed to the Sun, which will cause 'em to flower somewhat earlier in the Spring.

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Spring. In *April* these Plants will flower, and if they are in large Tufts, will at that Time make a very handsome Appearance; for which Reason most People suffer them to remain three or four Years unremoved, and when they are transplanted, do always plant 'em in Bunches, that they may produce a greater Number of Flowers. If these Plants are put into the full Ground, they must have a shady Situation, otherwise they will not thrive.

The third Sort is a low, creeping Plant, which lies upon the Surface of the Ground, somewhat like Moss; this grows wild in the Northern Counties of *England*, and is rarely cultivated in Gardens.

The fourth Sort is propagated for the Sake of its specious Flowers. This is brought from the *Alps* and *Pyrenean Mountains*, where it grows wild: It is usually planted in Pots, fill'd with fresh, light Earth, and in the Summer Season placed in the Shade, but in the Winter it should be exposed to the Sun; and all the Off-sets should be taken off, leaving the Plant single, which will cause it to produce a much stronger Stem for Flowering; for when there are Off-sets about the old Plant, they exhaust the Nourishment from it, whereby it is rendred much weaker. These Off-sets must be each planted in a separate half-penny Pot, fill'd with fresh Earth, in order to succeed the older Plants which generally perish after Flowering: These Off-sets will produce Flowers the second Year, so that there should be annually some of them planted, to succeed the others. When these Plants are strong and healthy, they will produce a Stem of Flowers full three Feet high, which divides into Branches in a

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pyramidal Order, and are beset with Flowers from Bottom to Top, so as to make a beautiful Figure; and as it usually flowers in *June*, so it is commonly placed in Chimnies of Halls, where it will continue in Flower a long Time, provided it have Water duly given it, and will afford an agreeable Prospect.

The fifth Sort is also a Native of the *Alps*, but will grow very well in Gardens; and tho' the Flowers are not very beautiful, yet for the Variety of its serrated, ever-green Leaves, it may have a Place in every good Garden. This may be propagated by Off-sets, and requires the same Management as the former.

SCABIOSA; Scabious.

The Characters are;

It hath a flosculous Flower, consisting of many unequal Florets, contained in a common Empalement. Some of these which occupy the M are cut into four or five Segments; the rest which are placed at the Edge, are bilabiated; each of these sits on the Top of an Embryo, which is crowned; and is contained in a proper Empalement, which afterwards becomes a Capsule, either simple or Funnel-shap'd, pregnant with a Seed crown'd, which before was the Embryo.

The Species are;

1. SCABIOSA; *pratensis, hirsuta, que officinarum.* C. B. P. Common Field Scabious.

2. SCABIOSA; *integrifolia, glabra, radice præmorsâ.* H. L. Whole-leav'd Scabious, or Devil's-bit.

3. SCABIOSA; *stellata, folio non dissecto.* C. B. P. Starred Scabious, with an undivided Leaf.

4. SCABIOSA; *stellata, folio laciniato, major.* C. B. P. Greater Starred Scabious, with a cut Leaf.

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5. SCABIOSA ; *peregrina, rubra, capitulo oblongo*. C. B. P. Red Indian Scabious, with longish Heads, commonly called, Musk Scabious.

6. SCABIOSA ; *peregrina, capitulo oblongo, flore carneo*. H. R. Par. Indian or Musk Scabious, with longish Heads and a flesh-colour'd Flower.

7. SCABIOSA ; *peregrina, capitulo oblongo, flore atropurpureo*. H. R. Par. Indian or Musk Scabious, with longish Heads, and a dark purple Flower.

8. SCABIOSA ; *peregrina, capitulo oblongo, flore variegato*. H. R. Par. Indian or Musk Scabious, with oblong Heads and a variegated Flower.

9. SCABIOSA ; *Indica, prolifera*. H. Edinb. Indian childing Scabious.

10. SCABIOSA ; *Africana, frutescens*. Par. Bat. Ic. African shrubby Scabious.

11. SCABIOSA ; *Africana, frutescens, folio rigido splendente serrato, flore albicante*. H. A. African shrubby Scabious, with a stiff, shining, serrated Leaf, and a whitish Flower.

12. SCABIOSA ; *Alpina, folio centaurei majoris*. C. B. P. Alpine Scabious, with a greater Centaury Leaf.

There are many other Sorts of Scabious's, which are preserved in Botanick Gardens for Variety; but those here mention'd are the principal Sorts which are propagated for the Beauty of their Flowers. The first Sort here mention'd grows wild in divers Parts of England, upon Arable Land; as doth the second in Woods and shady Places almost every where: The first of these is what the College of Physicians have directed to be used, under the Title of Scabious; though the People who supply the Markets do generally bring the second Sort instead thereof;

but it may be easily known therefrom by its hairy, divided Leaves. The second Sort the College have directed to be used under the Title of Devil's-bit, which Name it received from the lower Part of its Root being commonly eaten off.

Both these Plants are very common in the Fields and Woods, but may be propagated in Gardens, by sowing their Seeds in the Spring upon a Bed of fresh Earth; and when the Plants are come up, they must be transplanted into other Beds of fresh Earth, at about eight or ten Inches distance, observing to water 'em until they have taken Root, after which they will require no further Culture, but to keep 'em clear from Weeds, and the second Summer they will flower and produce Seeds, but their Roots will abide many Years, and may be parted, to propagate the Species.

The third Sort will grow to the Height of four or five Feet, and have a wooden Trunk. This is preserved in Green-houses in Winter, by such as are curious in foreign Plants. It may be propagated by planting Slips or Cuttings in Pots of fresh Earth, during any of the Summer Months, which, if placed in a moderate Hot-bed, watered and shaded, will take Root in a short Time; after which they may be inur'd to the open Air by Degrees, into which they should be remov'd to continue abroad until October, when they must be carried into Shelter, but must have as much free Air as possible in mild Weather: for they only require to be protected from hard Frost, and to be frequently watered. This Plant produces Flowers most part of the Year, for which it is chiefly preserved, tho' the Flowers have not more

more Beauty nor Scent than the common Field Sort.

The fourth Sort is an annual Plant, which is preserved in the Gardens of the Curious; but the Flowers of this are very like those of the former Sort, and have no Scent.

The *Indian* or *Musk Scabious's* are preserv'd for the Beauty and sweet Scent of their Flowers, which continue a long Time: These are propagated by sowing of their Seeds, the best Time for which is about the latter End of *May* or the Beginning of *June*, that the Plants may get Strength before Winter; for if they are sown too early in the Spring, they will flower the Autumn following, and the Winter coming on soon, will prevent their ripening Seeds; besides, there will be fewer Flowers upon those, than if they had remained strong Plants thro' the Winter, and had sent forth their Flower-stems in Spring, for these will branch out on every Side, and produce a prodigious Number of Flowers, and continue a Succession of them on the same Plants, from *June* to *September*, and produce good Seeds in Plenty.

The Seeds of these Plants should be sown upon a shady Border of fresh Earth (for if they are sown upon a Place too much exposed to the Sun, and the Season should prove dry, few of them would grow): When the Plants are come up, they may be transplanted into other Beds or Borders of fresh Earth, observing to water and shade them until they have taken Root, after which they will require no farther Care, but to keep 'em clear from Weeds, 'till *Michaelmas*, when they may be transplanted into the Middle of the Borders in the Pleasure-

Garden, where the several Sorts being intermixed, will make an agreeable Variety. They are extream hardy, being rarely injured by Cold, unless they have shot up to flower before Winter, but do seldom continue after ripening their Seeds.

The two *African Tree Scabious's* are abiding Plants, which are preserved in Pots, and housed in Winter, as the third Sort. These may be propagated by Slips or Cuttings, as the third, and require the same Management.

The twelfth Sort is preserved by such as are curious in collecting Varieties of Plants, but the Flowers have no Scent; however, as it is a hardy Plant, requiring no other Culture than the common Field Sorts, so it may be admitted, for Diversity, into the Pleasure-Garden, because it will thrive in shady Places, where few other Plants will grow.

SCILLA; Squils.

The Characters are;

It hath a large, acrid, bulbous Root, like an Onion: The Leaves are broad; the Flowers are like those of Ornithogalum, or the starry Hyacinth: They grow in a long Spike, and come out before the Leaves.

The Species are;

1. SCILLA; *vulgaris, radice rubra*. C. B. P. Common red Squil.

2. SCILLA; *radice alba*. C. B. P. The White Squil.

These Plants are very common upon the sandy Shoars of *Spain* and the *Levant*, from whence their Roots are annually brought to *England*, for Medicinal Use. But I was lately informed by a Letter from Dr. *William Stevens*, Professor of Botany at *Dublin*, that the *White Squil* grows in great Plenty upon the Sea Coast of the County of

Kerry in *Ireland*; which is the only Place in which it has been found growing wild in these Parts of *Europe*. But altho' these Roots are brought over chiefly for Medicinal Use, yet are they worthy of being cultivated in every good Garden, for the Beauty of their Flowers, which make a very handsome Appearance when they are strong Roots.

The best Time to transplant these Roots is in *May*, when their Leaves are decay'd; or if the Roots are brought from abroad, if they can be procured firm at that Season, or a little after, they should be planted in Pots of light, sandy Earth, and placed in the Windows of the Green-house, where, if they are blowing Roots, they will flower the *July* following.

These Plants must be preserved in Shelter, during the Winter Season, because if their Leaves are destroy'd by Frost in Winter, the Roots are subject to perish; but in Summer they should be expos'd to the open Air, and in dry Weather they must be frequently water'd, especially during the Season their Leaves are on, or that they are in Flower; but when the Roots are in a State of Rest, they should have but little Moisture, for Wet at that Time will rot them. They are pretty hardy, and do only require to be sheltered from hard Frost; but must have as much free Air as possible in open Weather.

SCLAREA; Clary.

The Characters are;

It is a verticillate Plant with a labiated Flower, consisting of one Leaf, whose Upper-lip, or Crest, is hooked, but the Under-lip, or Beard, is divided into three Parts, the middle Segment being hollow and bifid; out of the Flower-cup rises the Pointal,

attended by four Embryo's, which afterwards turn to so many roundish Seeds, inclosed in a Husk, which was before the Flower-cup.

The Species are;

1. SCLAREA; *Tabern. Ic.* Common Garden Clary.

2. SCLAREA; *vulgaris, lanuginosa, amplissimo folio. Tourn.* Common downy Clary, with a large Leaf.

3. SCLAREA; *laciniatis foliis. Tourn.* Clary with jagged Leaves.

4. SCLAREA; *Lusitanica, glutinosa, amplissimo folio. Tourn.* Portugal Clary, with a large glutinous Leaf.

5. SCLAREA; *Indica, flore variegato. Tourn.* Indian Clary, with a variegated Flower.

6. SCLAREA; *rugoso, verrucoso, & laciniato folio. Tourn.* Clary with a rough, warted and jagged Leaf.

7. SCLAREA; *glutinosa, floris lutei, variegati, barbâ amplâ cavâ. Boerh. Ind.* Glutinous Clary, with a yellow variegated Flower, having a large hollow Beard, commonly call'd, Jupiter's Distaff.

8. SCLAREA; *folio salviae, minor, sive glabra. Tourn.* Lesser or smooth Clary, with a Sage Leaf.

9. SCLAREA; *Orientalis, folio Betonica acutissimo, comâ purpurascense. T. Cor.* Eastern Clary, with a sharp-pointed Betony Leaf, and a purplish Top.

10. SCLAREA; *pratensis, foliis serratis, flore suave rubente. Tourn.* Meadow Clary, with serrated Leaves, and a soft red Flower.

The common Garden Clary is chiefly cultivated in *England* for Medicinal Use, but the other Sorts are preserved in Botanick Gardens, for the Sake of Variety, with many other Sorts of less Note; however, those here mention'd are worthy of a Place in large Gardens, where, if they are intermix'd among other large

large growing Plants, they will afford a pretty Variety, especially the fifth, eighth, ninth, and tenth Sorts, which produce long Spikes of beautiful Flowers, and continue a long time in Flower.

All these Sorts may be propagated by sowing of their Seeds upon a Bed of fresh Earth in *March*, and when the Plants are come up, they should be transplanted into Beds of fresh Earth, about eight Inches asunder, observing to water 'em until they have taken Root, after which they will require no farther Care, but to keep them clear from Weeds until *Michaelmas*, when they should be transplanted into the Places where they are to remain, placing them at a large Distance, for they spread pretty far, provided the Soil be good. If these Plants are planted for a Crop, intended for medicinal Use, they should be planted in Rows two Feet and a half asunder, and the Plants eighteen Inches distant in the Rows; But the other Sorts to be placed in Borders, should be planted eight or ten Feet distant, being intermixed with other Plants. Some of these Sorts will endure many Years, provided they are planted on a fresh Soil, not over moist or rich; but others do rarely continue longer than the second Year, perishing soon after they have perfected their Seeds; these should therefore be often renewed from Seeds, to have a Continuance of 'em; but the other Sorts may be increased by parting their Roots, the best Time for which is at *Michaelmas*, when their Stems begin to decay.

SCORDIUM; Water Germander.

The Characters are;

The Flowers are like those of Germander, which are produced from

the Wings of the Leaves; the Flower-cup is tubulous, and the whole Plant smells like Garlick.

The Species are;

1. SCORDIUM; C. B. P. Common Water Germander.

2. SCORDIUM; *alterum*, five *Salvia agrestis*. C. B. P. Wild Sage, *vulgô*.

3. SCORDIUM; *frutescens*, folio *angusto Salvia*, flore *luteolo*. Boerh. Ind. Shrubby wild Sage, with a narrow Sage Leaf and yellowish Flowers.

The first of these Plants grows wild in moist Places in the Isle of *Ely*, in great Plenty, but near *London* it is propagated in Gardens for medicinal Use. This Plant is increased by parting the Roots, or from Cuttings or Slips; the best Time for this Work is in the Beginning of *March*. These Slips must be planted in Beds of moist Earth, about four or five Inches asunder, observing to water them well until they have taken Root, after which they will require no further Care but to keep 'em clear from Weeds, and in *July* the Plants will be fit to cut for medicinal Use, being at that Time in Flower. But it is not proper to transplant them every Year, for then the Crop will be smaller, therefore every other Year will be sufficient to renew these Beds; nor should they be planted again upon the same Ground, but upon a fresh Spot, otherwise they will not thrive.

The *Wild Sage* is very common in Woods and shady Places in divers Parts of *England*, and is rarely cultivated in Gardens, except by those who are curious in Botany. This may be propagated by sowing the Seeds in the Spring, upon a Bed of fresh Earth, and when the Plants are come up, they should be transplanted out, at about a Foot

afunder, upon a light, fresh Soil, observing to water them until they have taken Root, after which they will require no further Care, but to keep 'em clear from Weeds, for they are extream hardy, and will abide many Years in almost any Soil or Situation.

The third Sort is of a more tender Nature, and requires to be shelter'd from severe Frost, to which if it be exposed, it is often destroy'd. This may be propagated by sowing the Seeds as the former, but when the Plants come up, they should be placed in Pots of fresh Earth, and in Winter put in an airy Part of the Green-house, where they may enjoy the free Air when the Weather is mild, for if they are too much drawn, they are subject to mould and decay. In the Summer Season they should be exposed to the open Air, with Myrtles and other Foreign Plants, and must be frequently refresh'd with Water.

SCORPIOIDES; Caterpillars.

The Characters are;

It hath a papilionaceous Flower, out of whose Impalement rises the Pointal, which afterwards becomes a jointed Pod, convoluted like a Snail or Caterpillar, having a Seed in each Joint, which is for the most part of an Oval Figure.

The Species are;

1. SCORPIOIDES; *Bupleuri folio*. C. B. P. The great rough Caterpillar.

2. SCORPIOIDES; *Bupleuri folio, corniculis asperis, magis in se contortis & convolutis*. Mor. Hist. Prickly Caterpillar.

3. SCORPIOIDES; *Bupleuri folio, siliquis levibus*. Park. Theat. Smooth-podded Caterpillar.

4. SCORPIOIDES; *siliqua crassa*. Boelii. Ger. Emac. Thick-podded Caterpillar.

These Plants are preserved in several curious Gardens, for their Oddness more than for any great Beauty: They are all of them annual Plants, which are propagated by sowing their Seeds upon a Bed of light, fresh Earth, and when the Plants are come up, they should be thinned, so as to leave 'em about ten Inches or a Foot afunder, because their Branches trail upon the Ground, and if they have not Room, they are apt to over-bear each other, and thereby are very often rotted, especially in moist Seasons. The Weeds should also be diligently clear'd from 'em, otherwise they will grow over and destroy 'em: In June these Plants will produce small, yellow, papilionaceous Flowers, which are succeeded by Pods, so much like Caterpillars, that a Person at a small Distance would imagine they were real Caterpillars feeding on the Plants; and it is for this Oddness of their Pods that these Plants are chiefly preserved.

These Plants do seldom thrive well if they are transplanted, therefore the best Method is to put in three or four good Seeds, in each Place where you would have the Plants remain (which may be in the Middle of large Borders in the Pleasure-Garden, where being intermix'd with other Plants, they will afford a pleasing Variety:) When the Plants come up, there should be only one of the most promising left in each Place, which should be constantly kept clear from Weeds, and when their Pods are ripe, they should be gathered and preserved in a dry Place till the

the following Spring, in order to be sown.

The first, third, and fourth Sorts are the best worth cultivating, their Pods being large and more visible than the other, and are more in Form of a Caterpillar.

SCORZONERA; Viper's-Grafs.

The Characters are;

It hath a semi-flosculous Flower, consisting of many half Florets, which rest upon the Embryo's, which are included in one common Empalement, which is scaly: The Embryo's do afterwards become oblong Seeds, which are furnish'd with Down.

The Species are;

1. SCORZONERA; *latifolia, sinuata*. C. B. P. Common or broad-leav'd Viper's-Grafs, with an indented Leaf.

2. SCORZONERA; *latifolia, altera*. C. B. P. Another broad-leav'd Viper's-Grafs.

3. SCORZONERA; *laciniatis foliis*. Tourn. Viper's-Grafs, with jagged Leaves.

The first of these Sorts is what the College of Physicians have directed for Medicinal Use: And it is also cultivated for the Use of the Kitchen in divers Gardens near London, though, at present, it is not so much propagated as it hath been some Years since, when it was more commonly brought to the Markets.

The second Sort is equally as good as the first for all the Purposes for which that is cultivated; but as it is less common, so it is rarely found in England, except in Botanick Gardens, where the third Sort is also cultivated for Variety, but is never apply'd to any Uses.

These Plants may be propagated by sowing their Seeds in the Spring upon a Spot of light fresh Soil. The best Method of sowing them,

is, to draw shallow Furrows by a Line about a Foot asunder, into which you should scatter the Seeds, thinly covering them over about half an Inch thick with the same light Earth; and when the Plants are come up, they should be thinned where they are too close in the Rows, leaving them at least six Inches asunder, and, at the same Time, you should hoe down all the Weeds to destroy them: And this must be repeated as often as is necessary; for if the Weeds are permitted to grow among the Plants, they will draw them up weak, and prevent their Growth.

There are many People who sow these Seeds promiscuously in a Bed, and afterwards transplant them out at the Distance they would have them grow: But this is not so well as the former Method, because their Roots do commonly shoot downright, which in being transplanted are often broken, so that they never will make so fair Roots as those which remain in the same Place where they are sown; for when the extrem Part of the Root is broken, it never extends itself in Length afterwards, but only shoots out into many forked small Roots, which are not near so valuable as those which are large and strait. These Roots may be taken up when their Leaves begin to decay, at which time they have done growing; tho' they may remain in the Ground until Spring, and may be taken up as they are us'd: But those which remain in the Ground after March, will shoot up their Flower-stems; after which they are not so good, being sticky and strong.

If you intend to save Seeds of these Plants, you should let a Parcel of the best remain in the Places

ces where they grew; and when their Stems are grown to their Height, they should be supported with Stakes, to prevent their falling to the Ground or breaking. In *June* they will flower, and about the Beginning of *August* their Seeds will ripen, when they should be gather'd, and preserv'd dry till the Spring following for Use.

SCROPHULARIA; Figwort.

The Characters are;

It hath an anomalous Flower, consisting of one Leaf, gaping at both Sides, and generally globular, cut as it were into two Lips; under the upper one of which are two small Leaves: The Pointal rises out of the Flower-cup, which afterwards turns to a Fruit or Husk, with a roundish-pointed End, opening into two Divisions, parted into two Cells by an intermediate Partition, and full of small Seeds, which adhere to the Placenta.

The Species are;

1. SCROPHULARIA; *nodosa foetida*. C. B. P. Stinking knobbed-rooted Figwort.

2. SCROPHULARIA; *aquatica, major*. C. B. P. Greater Water Figwort.

3. SCROPHULARIA; *Hispanica, sambuci folio glabro*. Tourn. Spanish Figwort, with a smooth Elder-leaf.

4. SCROPHULARIA; *maxima, Lusitanica, sambuci folio lanuginoso*. Tourn. Greatest Portugal Figwort, with a woolly Elder-leaf.

5. SCROPHULARIA; *ruta canina dicta, vulgaris*. C. B. P. Figwort, commonly called, Dogs Rue.

6. SCROPHULARIA; *saxatilis lucida, laserpitii Massiliensis foliis*. Boc. Mus. Shining Rock Figwort, with Leaves like the Maricilles Laserwort.

7. SCROPHULARIA; *glauco folio, in amplas laciniis diviso*. Tourn.

Figwort, with a Sea-green Leaf divided into large Segments.

8. SCROPHULARIA; *foliis filicis, modo laciniatis, vel ruta canina latifolia*. C. B. P. Figwort, with Leaves jagged after the manner of Fern, or broad-leav'd Dog's-Rue.

There are several other Species of this Plant which are preserv'd in some curious *Botanick* Gardens, but those here mention'd being the most beautiful, and best worth preserving, it would be needless to enumerate the other Sorts in this Place.

The first Sort here mention'd, grows wild in great Plenty in Woods and other shady Places in divers Parts of *England*, and is rarely cultivated in Gardens; but this being the Sort which the College of Physicians have directed for Medicinal Use, under the Title of *Scrophularia Major*, is by some preserved in their Physick-Gardens.

The second Sort is also very common in moist Places, and by the Sides of Ditches almost every where. This is also an officinal Plant, and stands in the Catalogue of Simples, under the Title of *Betonica aquatica, i. e. Water-Betony*, because the Leaves are somewhat like those of *Betony*.

These two Plants may be easily propagated in Gardens, by sowing their Seeds early in the Spring upon a Bed of fresh Earth, in a shady Situation; and when the Plants are come up, they should be transplanted out into a strong, moist Soil, about two Feet asunder, observing to water them until they have taken Root; after which they will require no farther Care but to hoe down the Weeds between them from time to time as they are produc'd. The second Year these Plants will shoot up to flower, and if their

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their Stems are suffer'd to remain, they will produce Seeds; but the Herb is generally cut for Use just as the Flowers begin to open; for if it stands longer the Leaves change, and the whole Plant contains much less Juice. The Roots of the first Sort will abide many Years without renewing, but it will be proper to transplant them every other Year, otherwise the Roots will spread over each other, and thereby destroy themselves.

The third and fourth Sorts are very beautiful Plants, being worthy of a Place in every good Garden. These are somewhat tenderer than the former Sorts, tho' they will endure the Cold of our ordinary Winters, if planted in a light Soil, and a warm Situation. These may be propagated by sowing their Seeds in the Spring upon a Bed of fresh Earth; and when the Plants are come up, they should be transplanted into Beds of fresh Earth, at about six Inches Distance from each other, observing to water and shade them until they have taken Root, after which they will require no farther Care but to keep them clear from Weeds, and in very dry Weather to refresh them with Water.

At *Michaelmas* some of them may be transplanted into the Middle of warm Borders in the Pleasure-Garden, and the rest may be planted into Pots fill'd with light, fresh Earth, which in Winter should be shelter'd under a common Hot-bed Frame, where they may be cover'd in frosty Weather, but in mild Weather they should have as much free Air as possible: These Plants thus shelter'd, will flower very strong in *April*, and if duly water'd in dry Weather, will produce ripe Seeds in *July*, which

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may be gather'd in the Pods, and preserv'd for Use. The Roots of these Plants will abide three or four Years, unless destroy'd by great Cold, and may be parted to increase them: But these Plants which are propagated from Slips do seldom flower so strong as those produc'd from Seeds, so that it is the best Way to raise every Year, some from Seeds to succeed the old Roots.

The fifth, sixth, seventh and eighth Sorts are also tender, and will rarely endure the Cold of our Winters without Shelter, unless in some very warm Situations; therefore these should be planted in Pots fill'd with fresh, light Earth, and shelter'd in Winter as the two former Sorts. These may be propagated either from Seeds, as the former, or from Cuttings; but the former being the best Way, is generally practis'd, because the Plants rais'd from Seeds do always flower much stronger than those produc'd from Cuttings, and likewise grow more regular. These Sorts will abide two or three Years, if defended from Frost in Winter, but if they should continue longer, they are seldom so beautiful as young Plants, so that they should be often renew'd from Seeds.

SECALE; Ric.

The Characters are;

The Flowers have no Leaves, but consist of several Stamina, which are produc'd from the Flower-cup: These Flowers are collected into a flat Spike, and are dispos'd almost singly; from the Flower-cup rises a Pointal, which afterward becomes an oblong slender Seed inclos'd in a Husk which was before the Flower-cup. This differs from Wheat, in having a flatter Spike, the Awn larger and more naked.

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The Species are;

1. SECALE; *hybernum, vel majus*. C. B. P. Common or Winter Rie.

2. SECALE; *vernum & minus*. C. B. P. Lesser or Spring Rie.

These are all the Sorts of Rie which are at present known in England. The Manner of sowing and husbanding these Plants being so well known to every Farmer, it would be needless to say any thing of it in this Place, more than that the first must be sown in Autumn, as Wheat; but the other may be sown in the Spring, at the Season for Barley, and will ripen almost as soon as that which was sown in Autumn; which is a great Advantage in such Countries, where it is subject to be destroy'd in Winter.

SECURIDACA; Hatchet-Vetch.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement rises the Pointal, which afterwards becomes an upright, plain, annual articulated Pod, containing in each Joint a Rhomboid Seed, having a Notch on the inner Side.

We have but one Species of this Plant in England, viz.

SECURIDACA; *lutea major*. C. B. P. The greater Yellow Hatchet-Vetch.

This Plant grows amongst the Corn in Spain, Italy, and other warm Countries; but in England it is preserv'd in Botanick Gardens for the Sake of Variety. This may be propagated by sowing the Seeds in Borders of light fresh Earth in the Spring, in the Places where they are to abide; for they seldom succeed well if they are transplanted: They should be allow'd at least two Feet Distance, because their Branches trail upon the Ground: In

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June these Plants will flower, and in August their Seeds will ripen, when they should be gather'd, and preserv'd for Use. A few of these Plants may be admitted into every good Garden for Variety, tho' there is no great Beauty in their Flowers.

SEDUM; Houseleek.

The Characters are;

The Flower consists of several Leaves, which are plac'd orbicularly, and expand in Form of a Rose; out of whose Flower-cup rises the Pointal, which afterwards turns to a Fruit, compos'd, as it were, of many Seed-vesels, resembling Husks, which are collected into a Sort of Head, and full of small Seeds.

The Species are;

1. SEDUM; *majus, vulgare*. C. B. P. Common great Houseleek.

2. SEDUM; *minus, luteum, folio acuto*. C. B. P. The most ordinary Prickmadam, or sharp-pointed Yellow Houseleek.

3. SEDUM; *minus, luteum, ramulis reflexis*. C. B. P. Yellow Stonecrop, with reflected Flowers.

4. SEDUM; *parvum acre flore luteo*. J. B. Wall Pepper, or Stonecrop.

5. SEDUM; *minus, à rupe Sancti Vincentii*. Raii Syn. Stonecrop of St. Vincent's Rock.

6. SEDUM; *minus, teretifolium album*. C. B. P. White flower'd Stonecrop, with round-pointed Leaves.

7. SEDUM; *minus, circinato folio*. C. B. P. Lesser Stonecrop, with round Leaves.

8. SEDUM; *majus, vulgari simile, globulis decidentibus*. Mor. Hist. Houseleek, like the common Sort, throwing off the young ones.

9. SEDUM; *montanum, tomentosum*. C. B. P. Mountain woolly House-

Houfeleek, commonly call'd, *Cobweb Houfeleek*.

10. SEDUM; *majus arborescens*. *J. B.* Greater Tree Houfeleek.

11. SEDUM; *majus arborescens, foliis elegantiffimè variegatis tricoloribus*. *Boerb. Ind.* Greater Tree Houfeleek, with beautiful variegated Leaves.

12. SEDUM; *Canarinum, foliis omnium maximis*. *H. A.* The greatest Houfeleek of the Canaries.

13. SEDUM; *Afrum, saxatile, foliolis fedi vulgaris, in rofam verè compofitis*. *Boerb. Ind.* African Rock Houfeleek, with small Leaves, like the common Sort, collected like a Rose.

14. SEDUM; *Afrum, montanum, foliis subrotundis, dentibus albis serratis, confertim natis*. *Boerb. Ind.* African Mountain Houfeleek, with roundish, indented, ferrated Leaves, with white Edges.

15. SEDUM; *Africanum, frutescens, folio longo serrato, confertim nato*. *Boerb. Ind.* African Shrubby Houfeleek, with long ferrated Leaves.

The first Sort is very common in *England*, being often planted upon the Tops of Houses, and other Buildings, where being preserv'd dry, it will endure the greatest Cold of our Climate. This is directed by the College of Physicians to be us'd in Medicine as a great Cooler. It may be propagated by planting the Off-fets (which are produc'd in great Plenty from the old Plants) any time in Summer. It requires to be plac'd very dry; for if its Roots are moist, the Plants will rot in cold Weather.

The second, third, fourth, sixth, and seventh Sorts grow in Plenty upon Walls and Buildings in divers Parts of *England*, where they pro-

pagate themselves by their trailing Branches, so as in a short time to cover the whole Place, provided they are not cut off. The sixth Sort is also prescrib'd by the College of Physicians to enter some officinal Compositions; but the People who supply the Markets, do commonly sell the Wall Pepper instead of this; which is a very wrong Practice, because the sixth Sort is a very cold Herb, and is accordingly directed to be put into cooling Ointments; and the Wall Pepper is an exceeding sharp acrid Plant (from whence it receiv'd the Name of Wall Pepper) which renders it contrary to the Intention of the Physician; therefore whoever makes use of these Plants, should be very careful to have the right, otherwise it is better to use the common great Sort, in which they are not so liable to be impos'd on.

The fifth Sort is a Native of *St. Vincent's Rock* in *Cornwal*, from whence it hath been taken, and distributed into the several Gardens of such Persons as are curious in preserving a Variety of Plants.

These Plants are all extreme hardy, and will thrive exceedingly, if planted in a dry Soil, and an open Situation, where they will propagate themselves by their trailing Branches, which take Root wherever they touch the Ground.

The eighth and ninth Sorts do propagate themselves by Off-fets, in the manner as the common Sort, though the eighth throws off the young ones from the Top of the old Plants, which, falling on the Ground, take Root, and thereby are increas'd very plentifully. These are both very hardy,
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and if planted in a dry rubbish Soil will thrive, and endure the severest Cold of our Climate.

The tenth Sort is propagated by planting Cuttings during any of the Summer Months, which should be laid in a dry Place a Fortnight after they are cut from the old Plants, that their wounded Parts may heal over before they are planted, otherwise they are subject to rot. These should be planted in Pots fill'd with light, fresh, sandy Earth, and plac'd in a shady Situation (but not under the Drip of Trees) observing to give 'em now and then a little Water, when the Earth is dry; but you must be very careful not to let them have too much Moisture, which will rot 'em.

When they have taken Root, they may be remov'd into a more open Situation, placing 'em amongst other Exotick Plants, in a Place where they may be defended from strong Winds; in which Situation they may remain until Autumn, when they must be remov'd into the Conservatory, to be preserv'd from Cold in Winter, which will destroy 'em. Tho' they do not require any artificial Heat, but only to be protected from Frost, yet do they require to have as much free Air as possible in mild Weather; therefore the best Way of preserving these Plants, is to have an airy Glass-case, in which many Sorts of *Ficoides's*, and other succulent Plants, may be intermix'd with these, where they will thrive much better than if placed amongst *Oranges*, *Myrtles*, and other Trees in a Greenhouse; because the Perspiration of those Trees renders the Air of the Place damp, and when the House is closely shut up, this Air is often rancid, which being imbib'd by

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the *Houfeleeks*, will cause their Leaves to fall off, and the Plants will decay soon after; whereas in an open airy Glass-case, where there are none but succulent Plants, there will never be near so much damp in the Air, and in such Places they will thrive and flower almost every Winter, when the Plants have gotten sufficient Strength. These Plants in moist Weather will send forth long Roots from their Branches, four or five Feet from the Ground, and if the Earth is plac'd near to these Roots, they will strike into it, and the Branches may be afterwards separated from the old Plants.

The eleventh Sort is a Variety of the tenth, which was accidentally obtain'd in the Gardens of the late Dutchess of *Beaufort* at *Badmington*, from a Branch which broke off from one of the plain Sort of *Houfeleek* Trees by accident, and being planted in Lime Rubbish afterwards, became beautifully variegated; from which Plant there have been vast Numbers rais'd, and distributed into many curious Gardens, both at Home and Abroad. This is propagated in the same manner as the former, and requires the same Management in Winter; but the Soil in which it is planted should be one half fresh sandy Soil, and the other half Lime Rubbish and Sea Sand, equally mix'd, in which it will thrive much better than in a rich Soil: You must also be very careful not to give it too much Water in Winter, which will cause it to cast its Leaves and decay. With this Management these Plants will grow to be eight or ten Feet high, and will produce beautiful Spikes of Flowers every Year, which are commonly in Beauty in Winter,
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and are thereby more valuable for coming at a Season when few other Plants do flower. Sometimes these Plants will produce ripe Seeds, which, if permitted to fall upon the Earth of the Pots, will come up the Summer following, from whence a great Stock of the Plants may be produc'd; tho' as they do so easily take Root from Cuttings, there will be no occasion to propagate them any other Way.

The twelfth Sort seldom produces any Side Branches, but grows up to one single large Head, with very large Leaves. This is only propagated from Seeds, for when the Plants produce their Flowers, they always decay so soon as the Seed is ripe; therefore the Seed should either be sown in Pots fill'd with light, sandy Earth as soon as it is ripe, or permitted to shed upon the Pots where they grew; which must be shelter'd from the Frost in Winter, and the Spring following the young Plants will come up in Plenty; when they should be transplanted into Pots fill'd with fresh, light Earth, and expos'd in Summer with other Exotick Plants, in some well-shelter'd Situation, where they may remain until October, when they should be hous'd with the foregoing Sorts, and manag'd in the same manner as hath been directed for them. These Plants will flower in four or five Years from Seed, provided they are well manag'd, after which (as was before said) they usually decay, therefore it is necessary to have a Succession of young Plants, that there may be annually some to flower.

The thirteenth and fourteenth Sorts are of smaller Growth: These do rarely rise above six Inches high, but send forth a great Quan-

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tity of Heads from their Sides, which if taken off and planted in fresh, light, sandy Earth, will take Root, and make fresh Plants, which may be preserv'd in Pots, and hous'd in Winter with the other Sorts before mention'd, and require to be treated in the same Way.

The fifteenth Sort grows to be shrubby, and may be propagated by planting the Cuttings in the manner directed for the Tree *House-leek*, and must also be hous'd in Winter, and treated in the same manner as hath been already directed for that Sort.

These are all of them very ornamental Plants in the Green-house, and add greatly to the Variety, when plac'd amongst other curious Exotick Plants.

SENECIO; Groundsel.

The Characters are;

It hath a flosculous Flower, consisting of many Florets, divided into several Segments, sitting on the Embryo, contain'd in an Empalement, consisting of one Leaf, and divided into many Parts, afterwards becoming of a conical Figure: the Embryo afterwards becomes a Seed, furnish'd with Down; at which time, the Empalement is reflex'd to make way for the Seeds to escape.

The Species are;

1. SENECIO; *minor, vulgaris*. C. B. P. Common Groundsel.

2. SENECIO; *Africanus, arborescens, folio serrato*. Boerb. Ind. African Tree-like Groundsel, with a ferrated Leaf.

3. SENECIO; *Virginianus, arborescens, atriplicis folio*. Par. Bat. Virginian Groundsel-Tree, with an Orach Leaf.

4. SENECIO; *Africanus, arborescens, folio ficoidis*. Com. Prel. African Groundsel-Tree, with a Ficoides Leaf.

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The first Sort here mention'd is one of the most common Weeds upon Dunghills, old Walls, and Gardens, that we have in *England*; so that instead of cultivating it, it requires some Pains to destroy it in Gardens: for if it be suffer'd to seed in a Garden (which it soon will do if permitted to stand) it will be very difficult to extirpate it. This is sometimes us'd in Medicine, but its chief Use in *England* is to feed Birds.

The second Sort grows to a Shrub of seven or eight Feet high, and produces its Flowers, in Summer and Autumn, at the Extremity of the Branches, in Bunches; which tho' of no great Beauty, yet serves to add to the Variety of Exotick Plants in the Green-house. This Plant may be propagated by planting the Cuttings, during any of the Summer Months, in a Bed of fresh, rich Earth, observing to water and shade them until they have taken Root, after which they will require no farther Care but to keep them clear from Weeds until *August*, when they should be taken up carefully, and planted into Pots fill'd with light rich Earth, and plac'd in a shady Situation until they have taken Root; after which they may be remov'd to a more open Situation, where they may remain till the latter End of *October*; when they should be remov'd into the Green-house, placing them in the coldest Part thereof, for they only require to be shelter'd from severe Frost, and must have as much free Air as possible in mild Weather; and be after refresh'd with Water: In Summer they may be expos'd with *Myrtles*, *Oleanders*, and other hardy Exotick Plants, where they will add to the Variety.

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The third Sort doth grow to be a large woody Shrub, about ten or twelve Feet high, but is hardly to be train'd up into a regular Figure, for the Branches are produced so irregularly, that it makes but an indifferent Figure in a Garden; but being a hardy Shrub, it is often preserved by such as are curious in collecting the various Sorts of hardy Plants.

This may be propagated by planting Cuttings, taken from the tender Wood, in the Spring of the Year, observing to water and shade them until they have taken Root; after which they must be carefully kept clear from Weeds, which is all the Management they will require until the succeeding Spring, when they should be transplanted either into the Places were they are designed to grow, or into a Nursery, where they may be trained up another Season; though it is the best Way to plant them where they are to remain, when they are taken from the Bed where they were raised, because these Plants are with Danger removed when they are grown very woody.

The best Time to remove them is in the Beginning of *April*, just before they shoot; and they should be placed in a light Soil and a warm Situation, where they will endure the Cold of our ordinary Winters without any Shelter, but in very sharp Winters they are sometimes destroy'd. This Shrub produces its Flowers in *October*, which altho' not very beautiful, yet are esteemed by some for their coming so late in the Season.

The fourth Sort is a very beautiful succulent Plant; the Leaves, which are long, thick, and juicy, are cover'd over with a glaucous Flew.

Flew, somewhat like Plums, and these being broken, do emit a strong Turpentine Odour, which has occasioned some ignorant Persons to give it the Name of *Balsam-Tree*.

This Plant is easily propagated by planting Cuttings of it during any of the Summer Months (which should be taken from the old Plants at least a Fortnight before they are planted, and laid in a dry Place for their Wounds to heal over, otherwise they will be subject to rot) then planted in Pots of light, sandy Earth, and placed in a Situation where they may enjoy the Morning Sun, observing to refresh them with Water, gently, as the Earth in the Pots dries: In this Place they may remain for eight or ten Days, after which the Pots should be plunged into a moderate Hot-bed, which will greatly facilitate their taking Root: After they are rooted, they may be again exposed to the open Air, placing them amongst *Ficoides*, *Sedums*, and other exotick succulent Plants, in a well-shelter'd Situation, where they may remain till the *October* following, when they should be removed into the Conservatory, placing them amongst the before-mentioned succulent Plants in an airy Glass-case, where they may be defended from Frost, but should have as much free Air as possible in mild Weather; for if they are shut up too close in Winter, or have the Addition of any artificial Heat, the Leaves will decay and fall off, and the Plants will lose their Beauty; whereas if they are treated in a hardier Manner, and have the Advantage of a dry, free Air, they will appear extream beautiful, and flower throughout the Winter.

The Management of this Plant being nearly the same as most of the *Ficoides* do require, I shall not repeat any Part of that in this Place, but desire the Reader to turn back to that Article for any farther Directions.

SENNA.

The Characters are;

The Flower for the most part consists of five Leaves, which are placed orbicularly, and do expand in Form of a Rose; the Pointal afterwards becomes a plain, incurved, bivalve Pod, which is full of Seeds, each being separated by a double, thin Membrane.

The Species are;

1. SENNA; *Italica*, *foliis obtusis*. C. B. P. Italian Senna with blunt-pointed Leaves.
2. SENNA; *Americana*, *Ligustræ folio*. Plum. American Senna with a Privet Leaf.
3. SENNA; *Alexandrina*, *five foliis acutis*. C. B. P. Alexandrian Senna with sharp-pointed Leaves.

The two first Species are preserv'd in several curious Gardens in England; but the third Sort, which is that used in Medicine, is at present very rare in this Country.

These Plants may be propagated by sowing their Seeds upon a Hot-bed early in the Spring, and when the Plants are come up, they should be transplanted into small Pots, filled with light, fresh Earth, and plunged into a new Hot-bed, observing to water and shade them until they have taken Root; after which they should have Air admitted to them, by raising the Glasses in Proportion to the Warmth of the Season, and the Bed in which they are placed; you must also observe to refresh them with Water from time to time, as the Earth in

the Pots shall require; and when the Roots of the Plants have filled the Pots, they should be shifted into other Pots a Size larger, observing to take off the Roots which are matted round the Outside of the Ball of Earth next the Pot, and then fill up the Pots with the same fresh Earth, and plunge them into the Hot-bed again, giving 'em Air and Water in Proportion to the Warmth of the Season and the Bed in which they are placed: In this manner they must be treated until Autumn, when they must be removed into the Stove, and plunged into the Bark-bed, where during the Winter Season, they must be carefully preserved, refreshing them with Water every three or four Days, according as the Earth in the Pots dries. This Stove should be kept above temperate Heat in Winter, otherwise the Plants will not live therein. The Summer following the two first Species will flower and produce Seed, but the third Sort is an annual Plant, and rarely perfects its Seeds in this Country.

SENNA THE BLADDER; *vide Colutea*.

SENNA THE SCORPION; *vide Emerus*.

SENSIBLE PLANT; *vide Mimosa*.

SERPYLELLUM; Mother of Thyme.

The Characters are;

It hath trailing Branches, which are not so woody and hard as those of Thyme, but in every other respect is the same.

The Species are;

1. SERPYLLUM; *vulgare, majus, flore purpureo*. C. B. P. Greater common Mother of Thyme with a purple Flower.

2. SERPYLLUM; *vulgare, minus*. C. B. P. Common smaller Mother of Thyme.

3. SERPYLLUM; *vulgare, flore amplo*. Raii Syn. Common Mother of Thyme with a large Flower.

4. SERPYLLUM; *citratum*. Ger. Emac. Lemon Thyme.

5. SERPYLLUM; *odore juglandis*. J. B. Mother of Thyme smelling like Wallnuts.

6. SERPYLLUM; *vulgare, hirsutum*. Raii Syn. Hairy wild Thyme.

7. SERPYLLUM; *latifolium, hirsutum*. C. B. P. Broad-leav'd, hairy, wild Thyme.

8. SERPYLLUM; *vulgare, majus, flore albo*. C. B. P. Greater wild Thyme with a white Flower.

9. SERPYLLUM; *vulgare, minus, folio ex albo & viridi vario*. H. L. Lesser wild Thyme with variegated Leaves.

The eight first mentioned Sorts do grow wild upon Heaths, and other large open Places, in divers Parts of England, where in the Summer Time when they are in Flower, they afford an agreeable Prospect, and being trod upon, do emit a grateful aromatick Scent. Their common Places of Growth are upon small Hillocks, where the Ground is dry and uncultivated, where, in a short time, they propagate themselves plentifully, both from Seeds and by their trailing Branches, which take Roots at their Joints, and so extend themselves every Way.

There are but two of these Species commonly cultivated in Gardens, *viz.* the Lemon Thyme, and that with strip'd Leaves; the first for its agreeable Scent, and the other for the Beauty of its variegated Leaves; these were formerly planted to edge Borders, but as they

they are very apt to spread, and difficult to preserve in Compass, so they are disused at present for that Purpose.

All these do propagate themselves very fast, by their trailing Branches, which strike out Roots from their Joints into the Earth, and thereby make new Plants; so that from a Root of each, there may soon be a large Stock increased. They may be transplanted either in Spring or Autumn, and love an open Situation and a dry undunged Soil, in which they will thrive and flower exceedingly, and continue several Years.

SESAMUM; Oily-grain.

The Characters are;

The Flowers are produced from the Wings of the Leaves, without any Foot-stalk; the Flower-cup consists of one Leaf, divided into five long, slender segments; the Flower is of one Leaf, in Shape like those of the Foxglove; the Pointal, which rises in the Middle of the Flower, afterwards becomes an oblong, four-corner'd Pod, divided into four distinct Cells, which are replete with esculent Seeds.

The Species are;

1. **SESAMUM**; *J. B.* Common Oily-grain.

2. **SESAMUM**; *alterum, foliis trifidis Orientale, semine obscuro. Pluk. Phyt.* Another Eastern Oily-grain with trifid Leaves and dark-colour'd Seeds.

3. **SESAMUM**; *Orientale, trifidum, flore niveo. Hort. Compt.* Eastern Oily-grain with trifid Leaves and white Flowers.

These three Sorts are often promiscuously cultivated in the Fields of Syria, Egypt, Candy, &c. where the Inhabitants use the Seeds for Food; and of late Years these Plants have been introduced in Carolina,

where they succeed extremely well: The Inhabitants of that Country make an Oil from the Seed, which will keep many Years, and not take any rancid Smell or Taste, but in two Years becomes quite mild; so that when the warm Taste of the Seed, which is in the Oil when first drawn, is wore off, they use it as Sallad-Oil, and for all the Purposes of Sweet-Oil.

In England these Plants are preserved in Botanick Gardens, as Curiosities: Their Seeds must be sown in the Spring upon a Hot-bed, and when the Plants are come up, they must be transplanted into a fresh Hot-bed to bring 'em forward; after they have acquired a tolerable Degree of Strength, they should be planted into Pots filled with rich, light, sandy Soil, and plunged into another Hot-bed, managing them as hath been directed for *Amaranthus's*, to which I shall refer the Reader, to avoid Repetition. For if these Plants are not brought forward thus in the former part of the Summer, they will not produce good Seeds in this Country; though after they have flowered, if the Season is favourable, they may be exposed in a warm Situation with other annual Plants. When these Plants have perfected their Seeds, they decay, and never continue longer than one Season.

The Seed of the first Sort is mentioned in the List of *Officinal Simples* in the College Dispensatory, but is rarely used in Medicine in England. From nine Pounds of this Seed, which came from *Carolina*, there were upwards of two Quarts of Oil produced, which is as great a Quantity as hath been known to be drawn from any Vegetable whatever, and this I sup-

pose might occasion its being called Oily-grain.

SIDERITIS; Iron-wort.

The Characters are;

It is a Plant with a labiated Flower, consisting of one Leaf, whose Upper-Lip, or Crest, is upright, but the Under-lip, or Beard, is divided into three Parts; out of the Flower-cup rises the Pointal, attended as it were by four Embryo's, which afterwards turn to so many oblong Seeds, shut up in a Husk, which was before the Flower-cup: To these Marks must be added, the Flowers growing in Whorles at the Wings of the Leaves, which are cut like a Crest, and differ from the other Leaves of the Plant.

The Species are;

1. SIDERITIS; *hirsuta, procumbens*. C. B. P. Hairy trailing Iron-wort.

2. SIDERITIS; *Alpina, hyssopifolia*. C. B. P. Hyssop-leav'd Iron-wort of the Alps.

3. SIDERITIS; *Orientalis, phlomis folio*. T. Cor. Eastern Iron-wort with a Phlomis Leaf.

There are several other Species of this Plant, which are preserved in some curious Botanick Gardens for Variety; but as they are Plants of little Beauty, so they are seldom cultivated in other Gardens.

All these Plants may be propagated by sowing their Seeds in the Spring, upon a Bed of fresh light Earth, and when the Plants are come up, they may be transplanted out into other Beds, allowing 'em a Foot Distance from each other, observing to water them until they have taken Root, after which they will require no farther Care, but to keep 'em clear from Weeds: the second Year they will produce Flowers and Seeds, and some of the Sorts will perish soon after, but others will abide several

Years, provided they are not planted in a Soil too moist.

SILQUA; Carob or St. John's Bread.

The Characters are;

It hath an apetalous Flower, having many Stamina which grow from the Divisions of the Flower-cup; in the Center of which rises the Pointal, which afterwards becomes a Fruit or Pod, which is plain and fleshy, containing several roundish plain Seeds.

We have but one Species of this Plant in England, viz.

SILQUA; *edulis*. C. B. P. The Carob-Tree, or St. John's-Bread, *vulgô*.

This Tree is very common in Spain, and in some Parts of Italy, as also in the Levant, where it grows in the Hedges, and produces a great Quantity of long, flat, brown-colour'd Pods, which are thick, mealy, and of a sweetish Taste: These Pods are many times eaten by the poorer Sort of Inhabitants, when they have a Scarcity of other Food; but they are apt to loosen the Belly, and cause Gripings of the Bowels. These Pods are directed by the College of Physicians to enter some medicinal Preparations, for which Purpose they are often brought from Abroad.

In England the Tree is preserved by such as delight in Exotick Plants, as a Curiosity: The Leaves do always continue green, and being different in Shape from most other Plants, do afford an agreeable Variety, when intermix'd with Oranges, Myrtles, &c. in the Greenhouse.

These Plants are propagated from Seeds, which, when brought over fresh in the Pods, should be sown in the Spring upon a moderate Hot-bed, and when the Plants are

come

come up, they should be carefully transplanted, each into a separate small Pot, filled with light, rich Earth, and plunged into another moderate Hot-bed, observing to water and shade 'em until they have taken Root; after which you must let them have Air in proportion to the Heat of the Weather. In *June* you must inure them to the open Air by Degrees, and in *July* they should be removed out of the Hot-bed, and placed in a warm Situation, where they may remain until the Beginning of *October*, when they should be removed into the Green-house, placing them where they may have free Air in mild Weather, for they are pretty hardy, and do require only to be shelter'd from hard Frosts. When the Plants have remained in Pots three or four Years, and have gotten Strength, some of 'em may be turned out of the Pots in the Spring, and planted into the full Ground, in a warm Situation, where they will endure the Cold of our ordinary Winters very well, but must have some Shelter in very hard Weather.

I have not as yet seen any of these Trees produce Flowers, though from some which have been planted some Time against Walls, it is probable there may be Flowers and Fruit in a few Years.

SILICUASTRUM; The Judas-Tree.

The Characters are;

It hath a papilionaceous Flower, whose Wings are placed above the Standard; the Keel is composed of two Petals; the Pointal which rises in the Center of the Flower-cup, and is encompassed with the Stamina, afterwards becomes a long flat Pod, containing several kidney-shap'd Seeds: To which may be added, roundish

Leaves growing alternately on the Branches.

The Species are;

1. **SILICUASTRUM; Cast. Durant.**
The Judas-Tree; *vulgô.*

2. **SILICUASTRUM; Canadense.**
Tourn. Canada Judas-Tree.

3. **SILICUASTRUM; quæ Ceratia agrestis, mucronato folio, floribus parvis Caroliniana. Pluk. Alm.** Carolina Judas-Tree with pointed Leaves.

The first of these Trees is very common in the South Parts of *France, Italy, and Spain*, from whence it was formerly brought into *England*, and preserved as a Curiosity in Green-houses, but of late Years they have been transplanted into the open Air, where they thrive very well, and produce great Quantities of beautiful Flowers in the Spring, and in favourable Seasons do perfect their Seeds extremely well.

The second Sort is very common in *Virginia, New-England, Canada*, and most of the Northern Countries of *America*, where it is called *Red-bud*; which Name, I suppose, it receiv'd from the beautiful Colour of its Flower-buds, which when fully expanded, are of a soft, purple Colour. These Flowers are produc'd in large Clusters from the old Wood of the Tree; and being opened before the Green Leaves come out, they make a beautiful Appearance, especially when the Trees are old and productive of Flowers; when many times the large Branches of the Tree are intirely cover'd with these beautiful Flowers, so as to afford as great Pleasure as any sort of flowering Tree whatever. These Flowers are commonly gather'd in *America*, and put into their Sallads, to which they add a quick, poignant,

nant, agreeable Flavour; and in *England* they are by some curious Persons used for the same Purpose.

The third Sort was brought from *Carolina*, where it grows in the Woods in great Plenty. This differs greatly in the Shape of its Leaves from the other two Sorts, and the Flowers are much smaller. At present this is less common in the *English* Gardens, and will not endure the Cold of our Climate so well, being subject to have the young Shoots destroy'd in very hard Winters; and if the Plants are young, sometimes they will die to the Ground.

These Plants may be propagated by sowing their Seed upon a Bed of light Earth towards the latter End of *March* or the Beginning of *April* (and if you put a little hot Dung under the Bed, it will greatly facilitate the Growth of the Seeds;) when your Seeds are sown, you should sift the Earth over them about half an Inch thick; and, if the Season prove wet, it will be proper to cover the Bed with Mats, to preserve it from great Rains, which will burst the Seeds, and cause them to rot.

When the Plants are come up, they should be carefully clear'd from Weeds, and in very dry Weather must be now and then refresh'd with Water, which will greatly promote their Growth. The Winter following, if the Weather be very cold, it will be proper to shelter the Plants, by covering them either with Mats or dry Straw in hard Frosts, but they should constantly be opened in mild Weather, otherwise they will grow mouldy, and decay.

About the Beginning of *April* you should prepare a Spot of good fresh Ground, to transplant these

out (for the best Season to remove them is just before they begin to shoot;) then you should carefully take up the Plants, being mindful not to break their Roots, and plant 'em in the fresh Ground as soon as possible, because if their Roots are dried by the Air, it will greatly prejudice them.

The Distance these should be planted must be proportionable to the Time they are to remain before they are again transplanted; but commonly they are planted two Feet, Row from Row, and a Foot asunder in the Rows, which is full Room enough for them to grow two or three Years, by which Time they should be transplanted where they are design'd to remain; for if they are too old when remov'd, they seldom succeed so well as younger Plants.

The Ground between the Plants should be carefully kept clean from Weeds in Summer, and in the Spring should be well dug to loosen the Earth, that their Roots may better extend themselves every Way: You should also at that Season prune off all strong side Branches (especially if you intend to train them up for Standard Trees) that their Top Branches may not be check'd by their Side Shoots, which do often attract the greatest Part of the Nourishment from the Roots; and if their Stems are crooked, you must place a strong Stake down by the Side of each Plant, and fasten the Stem to it in several Places, so as to render it straight, which Direction it will soon take as it grows larger, and thereby the Plants will be render'd beautiful.

When they have remain'd in this Nursery three or four Years, they should be transplanted in the Spring where

where they are design'd to remain, which may be in Wilderness Quar-
ters among other flowering Trees,
observing to place them with Trees
of the same Growth, so as they
may not be over-hung, which is
a great Prejudice to most Sorts of
Plants.

The usual Height to which these
Trees grow with us, is from twelve
to twenty Feet, according to the
Goodness of the Soil; tho' I don't
remember ever to see any of them
exceed that Growth, where they
have enjoy'd the greatest Advan-
tages, nor do I believe the *Caro-
lina* Sort will arrive to near that
Height.

SINAPI; Mustard.

The Characters are;

The Flower consists of four Leaves,
which are placed in Form of a Cross,
out of whose Flower-cup rises the
Pointal, which afterwards becomes
a Fruit or Pod, divided into two
Cells by an intermediate Partition,
to which the Valves adhere on both
Sides, and are filled with roundish
Seeds; these Pods generally end in a
fungous Horn, containing the like
Seeds. To these Marks must be added
an acrid burning Taste peculiar to
Mustard.

The Species are;

1. SINAPI; *siliqua latiuscula gla-
bra, semine rufo, sive vulgare.* J. B.
Common or Red Mustard.

2. SINAPI; *hortense, semine albo.*
C. B. P. Garden or White Mustard.

3. SINAPI; *Indicum, lactuca folio.*
Par. Bat. Indian Mustard, with a
Lettuce Leaf.

There are several other Species of
this Plant, which are preserv'd in
curious Botanick Gardens for Va-
riety; but as they are not in use,
nor have any thing valuable to re-
commend 'em, I shall not enume-
rate them here.

The first Sort is very common
in the Isle of Ely in *Cambridgeshire*,
and in many other Places where
the Land has been flooded with
Water for many Years; but upon
being drain'd, this Plant comes up
in a most plenteous Manner, which
has given Occasion for some Persons
to imagine that it was produc'd spon-
taneously without Seeds; but the
contrary of this has been fully
prov'd by several learned Gentlemen,
and therefore would be needless to
repeat here; for the Reason why
these Seeds do remain good for so
many Years, when cover'd with
Water, is, because they abound
with so sharp an Oil, that it pre-
vents the Water from pervading its
Body, and being kept from the Air,
is preserv'd from Corruption.

This Sort is also cultivated in
Gardens and Fields, in divers Parts
of England, for the Sake of its
Seeds. The Method of cultivating
this Plant, is to sow the Seeds
upon an open Spot of Ground
(which hath been well dug or
plough'd) in the Spring, and when
the Plants are come up, they should
be hoed, in order to destroy the
Weeds, as also to cut out the Plants
where they are too thick, leaving
them about ten Inches asunder (for
when they are left too thick, they
draw up weak, and the Seeds are
never so large and well nourish'd);
and if the Weeds should grow
again before the Plants have gotten
Strength enough to bear them down,
they must be hoed a second Time;
after which they will require no
farther Care until the Seeds are
ripe, when the Haulm should be
cut down, and spread upon the
Ground to dry, and then the Seeds
may be thresh'd out.

The second Sort is chiefly cul-
tivated in Gardens for a Salad Herb

in the Winter Season. The Seeds of this are commonly sown very thick in Drills, either upon a warm Border, or in very cold Weather upon a Hot-bed with Cresses and other small Sallad Herbs, which are commonly fit for Use in three Weeks or a Month from sowing; for if they are large, they are too strong to put into Sallads. In order to save the Seeds of this Plant, a Spot of Ground must be sown with it in the Spring, which should be manag'd in the same Manner as the former.

The third Sort may also be used in Sallads when it is very young, at which Time it has no disagreeable Taste; but as it grows large, so its Strength increases, and a certain Bitterness, which renders it very disagreeable. This is very hardy, and when allow'd sufficient Room, will spread very far, and produce large Leaves.

The Seeds of the first two Species are order'd for Medicinal Use; but the third Sort is seldom cultivated for Use in England.

SINAPISTRUM.

The Characters are;

The Flower consists of four Leaves, which are plac'd in Form of a Cross, but are erect'd; under these Petals are plac'd six Stamina, which occupy the under Part of the Flower; out of whose Flower-cup rises the Pointal, which afterwards becomes a Cylindrical Pod, with two Valves, and fill'd with roundish Seeds.

The Species are;

1. SINAPISTRUM; *Indicum pentaphyllum, flore carneo minus non spinosum. H. L.* Indian five-leav'd Sinapistrum, with a flesh-colour'd Flower, and not prickly.

2. SINAPISTRUM; *Ægyptiacum, heptaphyllum, flore carneo majus spinosum. H. L.* Greater prickly seven-

leav'd Ægyptian Sinapistrum, with a Flesh-colour'd Flower.

3. SINAPISTRUM; *Zeylanicum, triphyllum & pentaphyllum, viscosum, flore flavo. Boerb.* Three and five-leav'd viscous Sinapistrum, from Ceylon, with a yellow Flower.

The first and second Sorts are very common in *Jamaica, Barbados*, and other warm Countries in the *West-Indies*; but the third Sort I receiv'd from Dr. *Boerhaave*, who had it from *Ceylon*, with many other curious Seeds.

These Plants are preserv'd as Curiosities, by those who delight in Botanick Studies; but as they are not very beautiful, nor of any great Use, so they are rarely cultivated in other Gardens. They are all annual Plants, which perish soon after their Seeds are ripe; and in *England* must be rais'd in a Hot-bed in the Spring, and when the Plants have acquir'd Strength, they should be planted into Pots, and manag'd as hath been directed for the *Female Balsamines*, to which Article the Reader is desir'd to turn, to avoid Repetition. In *July* these Plants may be plac'd in the open Air, at which Time they will flower, and in *September* their Seeds will ripen, when they should be gather'd, and preserv'd in their Pods until the Season for sowing them.

SISARUM; Skirret.

The Characters are;

It produces its Flowers in an Umbel, which consist of several Leaves plac'd circularly, and expand in Form of a Rose; the Empalement afterwards becomes a Fruit, compos'd of two narrow Seeds, that are gibbous and furrow'd on one Side, but plain on the other: To these Marks must be added, that the Roots are shap'd like long Turnips, and are join'd to one Head.

We have but one *Species* of this Plant, *viz.*

SISARUM; *Germanorum*. C. B. P. Skirrets.

This is one of the wholesomest and most nourishing Roots that is cultivated in Gardens, and yet it is at present very rare to meet with in the Gardens near *London*: What may have been the Cause of its not being more commonly cultivated, I can't imagine, since there are many Kitchen Gardens which are proper for this Plant.

It may be propagated two Ways, *viz.* either by sowing the Seeds, or planting the Slips: The former Method is what I would chiefly recommend, because the Roots which come from Seeds are much larger than those produc'd from Off-sets, and are much tenderer. The Season for sowing the Seed is in the latter End of *February*, and upon a moist, rich Soil, which should be well dug and loosen'd, and being laid level, the Seeds should be sown thereon, and then trod in, after the common Method of sowing *Radishes*, raking the Ground over them smooth.

In *April* the Plants will come up, at which Time the Ground should be hoed over (as is practis'd for *Carrots*) to destroy the Weeds, and to cut out the Plants where they are too close, leaving them the first hoeing about three Inches asunder; but at the second hoeing, which should be perform'd about a Month after the first, they should be cut out to six Inches apart at least, observing to cut down all the Weeds; and during the Summer Season, the Weeds should be diligently hoed down as fast as they are produced, for if these Plants are stifled by Weeds, &c. they seldom come to good.

When their Leaves are decay'd, their Roots may be taken up for Use; but this should be done only as they are wanted, for if they are kept long above Ground they will be good for little. The Leaves commonly decay in *October*, so that from that Time till the Middle of *March*, when they begin to shoot again, they are in Season; but after they have shot forth green Leaves, the Roots become sticky, and are not so good.

The Method of propagating this Plant from Off-sets is as follows: About the latter End of *February* or Beginning of *March*, you should dig a moist rich Spot of Ground, in Size proportionable to the Quantity of Plants intended; then you should carefully dig up the old Roots, from which you should slip off all the Off-sets, preserving their Buds on the Crown of each intire; after this you should open a Drill cross the Spot of Ground with a Spade, in a strait Line, about eight or nine Inches deep, into which you should place the Off-sets, about six Inches apart, as upright as possible; then fill the Drill up again with the Earth which came out of it, and at a Foot Distance from the first make another Trench, laying the Off-sets therein, as before, and so continue the Drills at a Foot Distance, through the whole Spot of Ground; and if the Season should prove very dry, it will be proper to water them until they have taken Root in the Ground; after which they will require no other Care, but to keep the Weeds constantly destroy'd as they are produc'd, in the Manner before directed for the seedling Plants, and when their Leaves decay, they will be fit for Use, as before; but after any of these Roots have seceded, they are sticky,

sticky, and good for nothing, so that they should never be more than one Year old.

SISYMBRIUM AQUATICUM;
Water Cress.

This Plant grows in most Ditches and Ponds of standing Water near London, and is gathered for Sallads in the Spring, being by many Persons greatly esteemed for that Purpose. This is rarely cultivated in Gardens, for when it is planted in the Ground, it never thrives so well as in Water; but whoever hath a mind to propagate it, may get some Plants early in the Spring, out of the Ditches, and plant 'em in a moist Soil, where they will thrive tolerably well.

SMALLAGE; *vide* Apium.

SMILAX; Rough Bind-weed.

The Characters are;

The Flower consists of several Leaves, which are plac'd circularly, and expand in Form of a Rose, whose Pointal afterwards becomes a Fruit, or soft roundish Berry, containing oval-shap'd Seeds.

The Species are;

1. **SMILAX;** *aspera, fructu rubente.*
C. B. P. Rough Bindweed, with a red Fruit.

2. **SMILAX;** *viticulis, asperis, foliis longis, angustis, mucronatis levibus auriculis ad basim rotundioribus.* Pluk. Phyt. Rough Bindweed, with long, narrow - pointed, smooth Leaves, having round Ears at the Base.

3. **SMILAX;** *viticulis asperis, Virginiana, folio hederaceo levi, Zarza nobilissima nobis.* Pluk. Phyt. Rough Virginian Bindweed, with a smooth Ivy Leaf, commonly call'd Zarzaparilla.

There are several other Species of this Plant, which grow wild in Virginia, Carolina, and other Parts of America, in the Woods, where

they climb round the Stems of Trees and Shrubs to support themselves; for their Branches are very weak and trailing, and if not supported, do lie upon the Ground.

These Plants are preserv'd in the Gardens of such as are curious in Botany for their Variety; but there is no great Beauty or Use in them, so that they are not very commonly cultivated in other Gardens.

They are most of them hardy enough to endure the Cold of our Climate, if planted in a light Soil, and under the Shelter of Trees, where they delight to grow: They may be easily propagated by Offsets taken from the old Roots in March, just before they begin to shoot, and transplanted where they are to remain, where, if it be in a good Soil, they will flower very well, but they seldom produce Fruit in this Country.

But as the Seeds are often brought into England, so they may be sown in Pots of light rich Earth, and plac'd in a shady Situation in Summer; but in Winter they must be remov'd into Shelter, observing always to keep the Earth moist, and the following Spring the Plants will come up, when the Pots should be again remov'd into the Shade, and kept clear from Weeds, watering them in dry Weather; and the Spring following they may be transplanted where they are to remain.

SMYRNIUM; Alexanders.

The Characters are;

The Flowers are produc'd in Umbels, consisting of several Leaves, which are placed orbicularly, and expand in Form of a Rose: These rest upon the Empalement, which afterwards becomes an almost globular Fruit, compos'd of two pretty thick Seeds, sometimes shap'd like a Crescent, gibbous, and

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and streak'd on one Side, and plain on the other.

The Species are;

1. SMYRNIUM; *Matth.* Common Alexanders.

2. SMYNIUM; *peregrinum, rotundo folio.* C. B. P. Foreign Alexanders, with a round Leaf.

3. SMYRNIUM; *peregrinum, folio oblongo.* C. B. P. Foreign Alexanders, with an oblong Leaf.

4. SMYRNIUM; *Creticum, Paludapii foliis.* T. Cor. Candy Alexanders, with a Smallage Leaf.

The first of these Sorts (which is that order'd by the College for Medicinal Use) grows wild in divers Parts of England, and at present is seldom cultivated in Gardens; tho' formerly it was greatly used in the Kitchen, before Sellery was so much cultivated, which hath taken Place of Alexanders in most Peoples Opinion. The other Sorts are preserv'd in Botanick Gardens for Variety, but may either of them be cultivated for the Use of the Kitchen. The second Sort is much preferable to the first for blanching, as I have try'd, and will be tenderer, and not quite so strong.

All these Plants may be propagated by sowing their Seeds upon an open Spot of Ground in August, so soon as they are ripe; for if they are preserv'd till Spring, they often miscarry, or at least do not come up until the second Year; whereas those sown in Autumn, do rarely fail of coming up soon after Christmas, and will make much stronger Plants than the other.

In the Spring these Plants should be hoed out, so as to leave them ten Inches or a Foot apart each Way; and during the following Summer they must be constantly clear'd from Weeds, which if permitted to grow amongst them,

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will draw them up slender, and render them good for little. In February following the Plants will shoot up again vigorously, at which Time the Earth must be drawn up to each Plant to blanch 'em; and in three Weeks after, they will be fit for Use, when they may be dug up, and the white Part preserved, which may be stew'd, and eaten as Sellery.

SNAP-DRAGON; *vide* Antirrhinum.

SNEEZ-WORT; *vide* Ptarmica.

SNOW-DROP; *vide* Narcissus Leucojum.

SOLANUM; Nightshade.

The Characters are;

The Flower consists of one Leaf, which is divided into five Parts, and expands in Form of a Star; from the Flower-cup rises the Pointal, which afterwards becomes a round or oval soft succulent Fruit, containing many flat Seeds in each.

The Species are;

1. SOLANUM; *officinatum, acinis nigricantibus.* C. B. P. Common Nightshade of the Shops, with black Fruit.

2. SOLANUM; *officinatum, acinis puniceis.* C. B. P. Nightshade, with red Fruit.

3. SOLANUM; *officinatum, acinis luteis.* C. B. P. Nightshade, with yellow Fruit.

4. SOLANUM; *scandens, seu Dulcamara.* C. B. P. Perennial climbing Nightshade, commonly called, Bittersweet.

5. SOLANUM; *scandens, seu Dulcamara, flore albo.* C. B. P. Perennial climbing Nightshade, with a white Flower.

6. SOLANUM; *scandens, foliis variegatis.* H. R. Par. Perennial climbing Nightshade, with variegated Leaves.

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7. SOLANUM ; *fruticosum, bacciferum*. C. B. P. Shrubby Berry-bearing Nightshade, commonly call'd, Amomum Plinii.

8. SOLANUM ; *Guineense, fructu magno instar Cerasi nigerrimo umbellato*. Boerh. Ind. Nightshade from Guiney, with large Fruit, resembling Black Cherries, which grow in an Umbel.

9. SOLANUM ; *spiniferum, frutescens, spinis igneis Americanum*. Pluk. Phyt. Shrubby and Thorny American Nightshade, with Fire-colour'd Thorns.

10. SOLANUM ; *spinosum, maxime tormentosum*. Bocc. Rar. Plant. Thorny Nightshade, very much cover'd with a Wool or Down.

11. SOLANUM ; *Americanum, spinosum, foliis Melongena, fructu mammoso*. D. Lig. Tourn. Thorny American Nightshade, with Leaves like those of Mad Apple, and a Fruit shap'd like an inverted Pear, commonly call'd in Barbados Batchelors Pear.

12. SOLANUM ; *pomiferum, frutescens, Africanum, spinosum nigricans flore boraginis, foliis profunde liciniatis*. H. L. Shrubby African Apple-bearing Nightshade, with black Thorns, a Flower like Borage, and deeply jagged Leaves, commonly call'd Pomum Amoris.

13. SOLANUM ; *tuberosum, esculentum*. C. B. P. Potatoes.

14. SOLANUM ; *tuberosum, esculentum, flore albo*. H. R. Par. White Potatoes.

There are several other Species of this Plant, which are preserv'd in some curious Botanick Gardens for Variety; but those here mention'd being the most valuable Sorts I have observ'd in the English Gardens, I shall not enumerate the others.

The first Sort is now very common upon Dunghills, and on rich

cultivated Soils in many Parts of England, where it often becomes a troublesome Weed. This is the Sort which the College of Physicians have directed to be used in Medicine, under the Title of *Solanum hortenfe*. The second and third Sorts are very near to the first, differing from it in the Colour of their Fruits, and the Plants being woolly. The eighth Sort produces much larger Fruit than either of the former, and the Plants grow proportionably larger.

All these Sorts are annual Plants, which may be propagated by sowing their Seeds in March upon a Bed of light, rich Earth, in a warm Situation; and when the Plants come up, they should be transplanted out into fresh Beds of rich Earth, at about six Inches Distance, observing to water and shade them until they have taken Root, as also to keep them clear from Weeds, and in very dry Weather they should be often refresh'd with Water: In these Beds they may remain until they have grown so large as to meet each other, when they may be taken up, with a good Ball of Earth to each Plant, and planted where they are to remain, observing to allow 'em at least two Feet Distance, otherwise they will spread over each other, or any other Plants which grow near them. This Care may be taken with a few Plants of the red and yellow-berry'd and Guiney Sorts for the Sake of Variety, but the common Sort, if permitted to scatter its Seeds, will come up in Plenty without any Care.

The fourth Sort is a climbing woody Plant, which grows in the Hedges in divers Parts of England, and is by some planted in Gardens to cover Arbours or shady Walls in London, and other close Places, where few

few other Plants will thrive. This Plant is also used in Medicine for some particular Preparations; but the Herb-folks in the Markets do often sell this instead of the Garden *Nightshade*, which is a cooling Plant, and this a hot, acrid one, which renders it contrary to the Intention of the Ointment, wherein *Nightshade* is one of the Ingredients.

The Sort with white Flowers is a Variety of the former, as is also that with variegated Leaves, both which are preserv'd by those who are very curious in collecting the various Kinds of Plants.

These may be easily propagated by laying down their Branches, or by planting their Cuttings in the Spring upon a moist Soil, where they will soon take Root, and may afterwards be transplanted where they are to remain.

The *Amomum Plinii* is propagated in great Plenty for the Beauty of its large red Fruit, which is always ripe in Winter, so that when the Trees have Plenty of Fruit, they make a very handsome Appearance in a Green-house, when intermix'd with *Orange*, *Myrtle* and other Exotick Trees.

This Plant may be propagated by sowing its Seeds in a Pot of rich Earth in the Spring, placing it upon a moderate Hot-bed, which will greatly facilitate the Growth of the Seeds: The Earth in the Pot should be frequently water'd, for if it is kept too dry the Seeds will not grow. When the Plants are come up, you should make a gentle Hot-bed, which must be cover'd with rich Earth about six Inches thick; in this they should be planted about six Inches Distance each Way, and the Bed arch'd over with Hoops, &c. and cover'd with Mats, to shade them from the Sun and

Cold, observing frequently to water them.

When the Plants have acquir'd Strength, and the Season becomes favourable, you must inure them to bear the open Air by Degrees, to which they should be fully expos'd in *June*, when also they should be taken up, with a Ball of Earth to the Root of each Plant, and plac'd separately in Pots fill'd with rich Earth, which must be set in a shady Situation, and frequently water'd until they have taken Root; after which they may be remov'd into a more open Exposure, and placed amongst other Exotick Plants; but they do require a great Plenty of Water in dry Weather, without which they seldom produce much Fruit.

In Winter they must be remov'd into the Green-house, and placed in the coldest Part of the House, where they may have as much free Air as possible in mild Weather, being so hardy as many times to endure the Cold of our ordinary Winters abroad, when planted in a warm Situation, so that they only require to be shelter'd from severe Frost.

These Plants should be annually shifted about the latter End of *April*, when their Roots should be pared round, cutting off all the mouldy Fibres which were next the Pot, and the Pots fill'd up with fresh, rich Earth, which will strengthen their Flowers, and cause them to produce Plenty of Fruit, which, as I said before, ripens in Winter, and being of the Shape and Size of Cherries, are commonly call'd *Winter-Cherries* by the Gardeners.

The ninth and eleventh Sorts are much tenderer than the former, being brought from the warm Parts of *America*; These are also propa-

propagated by sowing their Seeds in the Spring upon a good Hot-bed, and when the Plants are come up, they should be each transplanted into a separate small Pot fill'd with rich Earth, and plung'd into a fresh Hot-bed, observing to water and shade them until they have taken Root; after which they should have Air and Water in Proportion to the Heat of the Season, and the Bed in which they are placed; and when their Roots have fill'd the Pots in which they were planted, (which they will do in a Month's Time if they thrive) they must be shaken out, and after having gently pared off the Fibres which grew next the Pot, they should be placed in Pots a Size larger, which must be fill'd with fresh, rich Earth, and plung'd into a fresh Hot-bed to bring the Plants forward, observing to water them frequently, for they will not thrive without Plenty of Moisture in warm Weather.

In *July* these Plants may be inur'd to bear the open Air by degrees, into which they may be remov'd if the Season be warm; but otherwise they must always be preserv'd either under Glasses or in the Stove; and if they are plac'd in the open Air, they should not remain there longer than the Middle of *August*, lest the Nights growing cold, should hurt them: During the Winter Season they must be preserv'd in the Stove, observing to water them frequently, and the second Year they will produce Flowers and Fruit.

The tenth and twelfth Sorts are not so tender as the last, but require an open airy Glas-Case, or a warm Green-house in Winter, but in Summer may be expos'd in the open Air with other Exotick Plants. These may be propagated by sow-

ing their Seeds on a Hot-bed as the former, and should be manag'd as hath been directed for them, with this Difference, that they may be much sooner expos'd to the Air, and should not be bred so tenderly. These are preserv'd for their odd Appearance, by such as are curious in cultivating Exotick Plants; their Fruits being ripe in Winter, do afford a Variety in the Green-house, and their Leaves and Flowers being very remarkable in their Colour, Shape, &c. do render them worthy of a Place in every good Collection of Plants.

There is also another Variety which differs very much from the tenth Sort, tho' call'd by that Name in most of the *English* Gardens where it is preserv'd, which I believe came from *Virginia*, and being somewhat like the Figure given by *Pere Boccone* of the tenth Sort, I suppose was taken for the same Plant; but they are very different from each other, as appear'd by some Plants which I rais'd from Seeds sent me by *Signior Tilli*, Professor of Botany at *Pisa*, of *Boccone's* Plant, and others rais'd from the old Sort which came from *Virginia*, both which being cultivated together, retain'd a specifick Difference.

The Red and White *Potatoes* are both indifferently cultivated in *England*; tho' the red Sort is most commonly brought to the Markets. These Plants were originally brought from *Virginia* into *Europe*, where they are at present so generally esteem'd, as to be one of the most common esculent Roots now in Use.

These Plants are propagated by planting the smallest Roots in Spring, which, in a good Soil, will multiply exceedingly; for I have many times seen ten twelve or more Roots produced from a single Off-set in one Year.

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The Soil on which these should be planted, ought to be rather moist than dry, and of a rich, soft, loose Texture; for if the Ground be too dry or binding, they will produce but very small Roots, and those but sparingly. This Soil should be well dug or plough'd, and the small Roots laid in Trenches or Furrows six Inches deep, and about six Inches asunder in the Furrows; but the Furrows must be a Foot Distance from each other, for when they are too close, their Roots will not be large, which is what People usually covet.

In the Spring and Summer Months, the Weeds should be carefully hoed down between the Plants, until their Haulm is strong enough to bear them down, and prevent their Growth: And when their Haulm decays in Autumn, the Roots may be taken up for Use; which may be done as they are wanted, till the Frost begins to set in; when there must be a Quantity taken up, and laid in Sand in a dry Cellar, where they may be protected from Frost. The best of these may be taken out for Use in Winter, and the small ones reserv'd to plant in the Spring.

SONCHUS; Sowthistle.

These are most of them Weeds in England, and are not planted in Gardens, for if their Seeds are once permitted to scatter upon the Ground, they will soon stock it with Plants; for which Reason they should always be extirpated, not only those in the Garden, but also in the Parts near it, because their Seeds being furnish'd with Down, are wafted in the Air to a considerable Distance; where falling to the Ground, they soon come up, and prove troublesome.

SORBUS; The Service Tree.

The Characters are;

The Flower consists of several Leaves, which are plac'd orbicularly, and expand in Form of a Rose, whose Flower-cup afterwards becomes a Fruit shap'd like a Pear or Medlar; to which must be added, Pennated Leaves, like those of the Ash.

The Species are;

1. SORBUS; *sativa*. C. B. P. The manur'd Service Tree.

2. SORBUS; *sativa*, *fructu pyramiformi*, *medio rubente*. H. Cath. The manur'd Service, with Pear-shap'd Fruit, red in the Middle.

3. SORBUS; *sativa*, *fructu serotino, minori*, *turbinato rubente*. Tourn. The lesser late-ripe Service, with a Medlar-shap'd Fruit.

4. SORBUS; *aucuparea*. J. B. The wild Service, or Quack-beam, by some call'd, The Quicken Tree

5. SORBUS; *sylvestris*, *foliis ex luteo variegatis*. The wild Service, or Quick-beam, with strip'd Leaves.

The manur'd Service was formerly said to be growing wild in England; but this I believe was a Mistake, for several curious Persons have strictly search'd those Places where it was mention'd to grow, and could not find it, nor could they learn from the Inhabitants of those Countries, that any such Tree had grown there.

In Italy these Trees are very common, where they have a great Variety of Sorts, which were obtain'd from Seeds; but I have not observ'd in the English Gardens more than the three Sorts here mention'd, and those are yet very scarce, for I have not seen more than one large Tree of the true Service in England, which was lately growing in the Gardens formerly belonging to John Tradescant at

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South Lambeth near *Vaux-Hall* in *Surrey*, who was a very curious Collector of rare Plants, in *King-Charles* the *Second's* Time; which Tree was near forty Feet high, and did produce a great Quantity of Fruit annually. There are, indeed, some Trees of middling Growth in the Gardens of *Henry Marsh, Esq;* at *Hammer-smith*, which produce Fruit, (from whence several young Plants have been rais'd of late in the Nurseries near *London*); but these are small when compar'd to that in *John Tradescant's* Garden.

These Fruits do nearly resemble *Medlars* in their Nature, being of a very austere Taste till they are rotten, when they have a more agreeable Flavour; but in *England* their Fruit does not ripen so well as in warmer Countries, and is therefore less esteem'd: However, the Trees are propagated by such Persons as are curious in collecting the various Kinds of hardy Trees and Shrubs, for the Oddness of their Leaves and Fruit.

They may be propagated by sowing their Seeds on a moderate Hot-bed in the Spring; and when the Plants are come up, they should be carefully kept clear from Weeds, and in dry Weather water'd; but they should be expos'd to the open Air: For the only Reason for making a Hot-bed, is, to forward the Growth of the Seeds; but if when the Plants are come up, the Bed is cover'd, it will draw the Plants, and spoil them. In this Bed the Plants should remain until the Middle of *March* the succeeding Spring, when there should be a warm, light Spot of Ground prepar'd to receive them; into which they should be planted in Rows two Feet asunder, and a Foot distant in the Rows; observing to

take them up carefully, and to plant them as soon as possible that their Roots may not dry.

During the Summer, the Ground should be kept constantly clear from Weeds, and in Winter there should be a little Mulch laid upon the Surface of the Ground about their Roots, to protect them from being injur'd by Frost; but in the Spring the Ground between 'em should be dug, burying the Mulch therein: In doing of which, you must be careful not to cut or injure the Roots of the Plants.

In this Nursery they may continue three or four Years, according to their Growth, when it will be proper to transplant them out where they are to remain. The best Season for which is in *March*, just before they begin to shoot: The Soil should be warm in which they are planted, and the Situation defended from cold Winds: In which Place they will thrive and produce Fruit in a few Years; but as the Fruit will vary from those which the Seeds were taken from, (as is the Case of most Sorts of Fruit) so the surest Method to have the particular Sorts which you intend to cultivate, is to bud or graft them either upon their own or the wild *Service* Stock; upon which they will take and produce Fruit in a few Years.

The wild *Service* or *Quick-beam* grows wild in divers Parts of *England*, but it is often cultivated in Gardens for Variety. This produces large Bunches of Flowers at the Extremity of its Branches in *May*, which are succeeded by large roundish Fruit, which change to a beautiful Scarlet Colour in Autumn, when they afford an agreeable Variety in Wilderness Quarters.

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This Tree seldom grows above twenty Feet high, so should be always plac'd in Lines of Trees of the same Growth.

The Wood of this Tree, is much commended by the *Wheelwright* for being all Heart, and it is of great Use for *Husbandmens* Tools, Goads, &c. The Flowers of this Tree smell very sweet, and the Fruit is extraordinary Food for *Thrushes*; so that where these Trees are planted, they will greatly frequent.

The Sort with variegated Leaves is preserved by such as are curious in collecting the several Sorts of Strip'd Plants, but there is no great Beauty in it. This may be propagated by Layers, or by being budded on the plain Sort, but they will become plain again, if planted on a very rich Soil.

These Trees should have a moist, strong Soil, but will grow in the most expos'd Places, being extreme hardy, which renders them worthy of Care, since they will thrive where few other Trees will succeed.

SORREL; *vide* Acetosa.

SOUTHERNWOOD; *vide* Abrotanum.

SOWBREAD; *vide* Cyclamen.

SPARTIUM; The Broom-Tree.

The Characters are;

It hath a papilionaceous Flower, whose Pointal, which rises from the Flower-cup, afterwards becomes a short, roundish, swelling Pod, containing, for the most Part, one Kidney-shap'd Seed in each.

The Species are;

1. SPARTIUM; *alterum*, *monospermum*, *semine reni simile*. C. B. P. Another Spanish Broom, with Pods containing one Kidney-shap'd Seed.

2. SPARTIUM; *tertium flore albo*. C. B. P. The white Spanish Broom.

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These Plants are propagated by sowing their Seeds upon a moderate Hot-bed in the Spring; and when they are come up, they must be each planted in a separate small Pot, fill'd with fresh, light Earth, and plung'd into a fresh Hot-bed, observing to water and shade them until they have taken Root; after which they must have a good Share of free Air, by raising the Glasses when the Weather is favourable; and when the Plants begin to have Strength, they must be inur'd to the open Air by Degrees: Into which they should be remov'd in *July*, placing them in a warm Situation, and during the Summer Season, they must be frequently water'd; and the Beginning of *October* they must be remov'd into the Green-house, placing them where they may have Air and Sun, and as the Earth of the Pots dries, they must be refresh'd with Water.

The Spring following they should be shaken out of the small Pots, and put into others a Size larger, filling them up with fresh, light Earth; and as the Season advances, so they must be inur'd to the open Air again; and in *May* they should be carry'd abroad, and plac'd amongst other Exotick Plants, where they will add to the Variety.

While these Plants are young, they are somewhat tender; but when they are woody, they will endure a greater Degree of Cold; and if planted in a very warm Situation, will endure the Cold of our ordinary Winters in the open Air.

The Flowers of these Plants are small, and generally produc'd thinly upon the Branches, so that they do not make a very great Appearance; however, for Variety, they

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may have a Place in every good Collection of Plants. The Sort with white Flowers will often produce ripe Seeds in *England*, when the Summer is warm; but the Seeds of both Sorts may easily be obtain'd from *Spain* or *Portugal*, where they grow wild in great Plenty.

SPINA ALBA; *vide* Mespilus.

SPINACHIA; Spinach or Spinage.

The Characters are;

It hath an apetalous Flower, consisting of many Stamina included in the Flower-cup, which are produc'd in Spikes upon the Male Plants which are barren; but the Embryo's are produc'd from the Wings of the Leaves on the Female Plants, which afterwards become a roundish or angular Seed, which in some Sorts have Thorns adhering to them.

The Species are;

1. SPINACHIA; *vulgaris, capsulâ seminis aculeatâ*. Tourn. The common prickly or narrow-leav'd Spinach.

2. SPINACHIA; *vulgaris capsulâ seminis non aculeatâ*. Tourn. Common smooth-seeded Spinach, with broader Leaves.

3. SPINACHIA; *vulgaris capsulâ seminis non aculeatâ, folio maximo rotundo*. Spinach, with smooth Seeds, and a very large round Leaf.

The first of these Sorts is commonly cultivated in Gardens for Winter Use, it being much harder than any of the other Sorts.

The Seeds of this Kind should be sown upon an open Spot of Ground towards the latter End of *July*, observing, if possible, to do it when there is an Appearance of Rain; for if the Season should prove dry for a long time after the Seed is sown, the Plants will not come up regularly, and many times there

will not be half a Crop. When the *Spinach* is come up, the Ground should be hoed to destroy the Weeds, and also to cut up the Plants where they are too close, leaving the remaining Plants about four or five Inches asunder: But this should always be done in dry Weather, that the Weeds may be destroy'd after they are cut.

About a Month or five Weeks after the first Hoeing, the Weeds will begin to grow again, therefore the Ground should be then hoed again the second Time, observing, as before, to do it in dry Weather: But if the Season should prove moist, it will be proper to gather the Weeds up after they are cut, and carry 'em off the Ground; for if the *Spinach* is not clean'd before Winter from Weeds, they will grow up, and stifle it so that in wet Weather the *Spinach* will rot away.

In *October* the *Spinach* will be fit for Use, when you should only crop off the largest Leaves, leaving those in the Center of the Plants to grow bigger; and thus you may continue cropping it all the Winter and Spring, until the young *Spinach*, sowed in the Spring, is large enough for Use, which is commonly in *April*; at which time the Spring advancing, the Winter *Spinach* will run up to Seed, so that you should cut it up, leaving only a small Parcel to produce Seeds.

But the Ground in which this Winter *Spinach* is sown, being commonly planted with early *Cabbages*, it is not proper to let any of the *Spinach* remain there for Seed, but it should be cleared off as soon as ever the *Spinach* is fit for Use, that the *Cabbages* may be earth'd up, and laid clear, which is of great Service to them; therefore you should

should sow a small Spot of Ground with this sort of *Spinach* on Purpose to stand for Seed, where there should be no other Plants among it.

The two Sorts with smooth Seeds do produce much larger and thicker round Leaves than the former, but being somewhat tenderer, are always sown in the Spring, especially the third Sort, which is preferable to either of the former for Summer Use.

These are either sown upon an open Spot of Ground by themselves, or else mix'd with *Radish-seed*, as is the common Practice of the *London* Gardeners, who always endeavour to have as many Crops from their Land in a Season as possible: But, where Land is cheap in the Country, it will be the better Method to sow it alone without any other sort of Seed mix'd with it; and when the Plants are come up, the Ground should be hoed to destroy the Weeds, and cut out the Plants where they are too close, leaving the remaining about three Inches asunder; and when they are grown so large as to meet, you may then cut out a Part of it to use, thinning them, that they may have Room to spread; and this Thinning may be twice perform'd, as there is Occasion for the *Spinach*, at the last of which the Roots should be left eight or ten Inches asunder; and if then you hoe the Ground over again, to destroy the Weeds, it will be of great Service to the *Spinach*; for if the Land is good upon which it was sown, the third Sort, with this Management, will many times produce Leaves as large as the *Broad-leav'd Dock*, and be extremely fine.

But in order to have a Succession of *Spinach* through the Season,

it will be proper to sow the Seed at three different Times in the Spring; the first early in *January*, which must be on a dry Soil; the second the Beginning of *February*, upon a moister Soil; and the third the Beginning of *March*, which should be on a very moist Soil; and this third Sowing should be hoed out thinner the first Time of hoeing it, than either of the former Sowings; for there will be no Necessity to leave it for cutting out thin for use, because the former Sowings will be sufficient to supply the Table 'till this third Sowing is full grown; besides, by leaving it thin at first, it will not be apt to run up to Seed so soon as it would if the Plants were close.

In order to save Seed of either of these Kinds, you should sow an open rich Spot of Ground, with the Sort you intend, in *February*, after the Danger of being injur'd by Frost is over; and when the Plants are come up, they should be hoed out to six or eight Inches Distance, observing to cut down the Weeds at the same Time; and when the Plants have grown about three Weeks or a Month longer, they should be hoed a second Time, when they should be left twelve or fourteen Inches asunder at least; for when they have shot out their Side-Branches, they will sufficiently spread over the Ground.

You must also observe to keep 'em clear from Weeds, which if suffer'd to grow amongst the *Spinach*, will cause it to run up weak, and greatly injure it. When the Plants have run up to Flower, you will easily perceive two Sorts amongst them, *viz.* *Male* and *Female*; the *Male* will produce Spikes of stameneous Flowers, which con-

tain the *Farina*, and are absolutely necessary to impregnate the Embryo's of the *Female* Plants, in order to render the Seeds prolific. These *Male* Plants are by the Gardeners commonly called *She Spinach*, and are often by the Ignorant pulled up as soon as they can be distinguished from the *Female*, in order, as they pretend, to give Room for the Seed-bearing to spread; but from several Experiments which I made on these Plants, I find, where-ever the *Male* Plants are entirely removed before the *Farina* is shed over the *Female* Plants, the Seed will not grow which they produce, so that it is absolutely necessary to leave a few of them in every Part of the Spot; though there may be a great many drawn out where they are too thick; for a small Quantity of *Male* Plants (if rightly situated) will be sufficient to impregnate a great Number of *Female*, because they greatly abound with the *Farina*, which, when ripe, will spread to a considerable Distance, when the Plants are shaken by the Wind.

SPIRÆA FRUTEX; *Spiræa Frutex*; *vulgô*

The Characters are;

The Flower is composed of many Leaves, which are plac'd in a circular Order, and expand in Form of a Rose; out of whose Flower-cup rises the Pointal, which afterwards becomes a Fruit composed of several Pods, in which are contain'd several oblong Seeds.

The Species are;

1. **SPIRÆA**; *salicis folio*. *Tourn.* *Spiræa Frutex*; *vulgô*.

2. **SPIRÆA**; *opuli folio*. *Tourn.* *Spiræa* with a Marsh-Elder Leaf, commonly called, *Virginian Gelder-Rose* with a Currant Leaf.

3. **SPIRÆA**; *Hyperici folio non creâto*. *Tourn.* *Hypericum Frutex*; *vulgô*.

4. **SPIRÆA**; *Africana, odorata, foliis pilosis*. *Com. Rar.* Sweet-scented African *Spiræa* with hairy Leaves.

The first of these Shrubs is very common in the Nurseries near London, where it is sold with other flowering Shrubs at a certain Price by the Hundred. This Shrub seldom rises above five Feet high, so is proper to intermix with other Shrubs of the same Growth, in small Wilderness Quarters, and other Plantations of flowering Trees.

This Plant may be propagated from Suckers, which are sent forth in Plenty from the Stems of the old Plants, or by laying down the tender Branches, which, when rooted, should be transplanted out in Rows at three Feet distance, and the Plants a Foot asunder in the Rows: In this Nursery they may remain two Years, observing to keep the Ground clear from Weeds, and in the Spring to dig up the Ground between the Rows, so that their Roots may the more easily extend themselves; and if they shoot out many Side-branches, they should be prun'd off, so as to reduce the Shrubs to a regular Figure, and afterwards they may be transplanted where they are to remain, either in small Wilderness Quarters, or in Clumps of flowering Shrubs, observing to place them amongst other Sorts of equal Growth.

The second Sort is not quite so common in England as the former. This was originally brought from America, but it being full as hardy as the former, and increating as fast by Suckers, it may soon be obtain'd in Plenty. This is nearly of the

the same Growth with the former, and may be intermixed therewith in Wilderness Quarters, to add to the Variety; it may be propagated and manag'd in the same Manner as the former.

The third Sort is very common in the Nurseries near *London*, where it is generally known by the Name of *Hypericum Frutex*, and is sold amongst other flowering Shrubs at a common Rate. This may be propagated by laying down the under Branches, which will take Root in the Compass of one Year, when they may be taken off, and planted in a Nursery for two or three Years (as hath been directed for the former) after which they may be transplanted out where they are design'd to remain, placing 'em with the two former, being nearly of the same Growth, where they will add to the Variety.

The two first Sorts do produce their Flowers at the Extremity of their Shoots, the first in a long Spike, and the second in Form of an Umbel; but the third Sort produces its Flowers at the Joints of the former Year's Wood, in Bunches, so that the whole Tree seems covered with white Flowers, when they are blown. They all three produce their Flowers in *May*, and sometimes continue in Beauty 'till *June*, in a cool Season, for which they are esteemed by the Curious.

These Shrubs do require no other Pruning but to cut out all the dead Branches, and such as grow irregular, and take off all their Suckers every Year, for if these are permitted to grow, they will starve the old Plants, by drawing away their Nourishment. The Ground between 'em should also be dug every Spring, to encourage their Roots, and every third Year

a little rotten Dung buried therein, which will cause 'em to flower very strong.

The fourth Sort is a Native of the *Cape of Good Hope*, where the Inhabitants call it *Buchu*, and esteem it extremely for many medicinal Purposes, but particularly for expelling the Venom of Snakes.

This Plant is at present very rare in *England*, and I believe in most Parts of *Europe*, though formerly it was growing in several curious Gardens in *Holland*, but hath been lost in that Country for some Time, 'till two Years ago it was retrieved again from the *Cape of Good Hope*, by Mr. *George Clifford* of *Amsterdam*, a Gentleman who is extremely curious in Botany and Gardening, from whom I was furnish'd with it.

This Plant is propagated from Seeds, which should be sown upon a moderate Hot-bed in the Spring, and when the Plants are come up, they must be transplanted each into a separate small Pot, fill'd with light, fresh Earth, and plung'd into a fresh Hot-bed, observing to water 'em and shade the Glasses in the Heat of the Day, until they have taken Root; after which they should have Air in proportion to the Heat of the Weather, and the Bed in which they are placed. In *June* they should be inured to the open Air by Degrees, and the Beginning of *July* they should be remov'd out of the Hot-bed, and placed in a warm Situation, where they may remain until the End of *September*; at which Time they must be removed into the Greenhouse, placing 'em in a warm Part, but not too close under other Plants. During the Winter Season they must be now and then gently refresh'd with Water, but they

should not have it given them in large Quantities at that Season; but in the Summer they do require to be water'd more plentifully; and at least once a Year they must be shifted into other Pots of a larger Size, as the Plants advance their Growth, giving 'em fresh Earth, which should be light and rich.

This Plant produces its Flowers near the extream Parts of the Branches, which altho' not very beautiful, yet for the singular Appearance of the hairy Leaves, which adds to the Variety of exotick Plants in the Green-house, it deserves a Place in every curious Garden, especially as it requires no artificial Heat in Winter.

SQUASHES; *vide* Melo-pepo.

SQUILS; *vide* Scilla.

STACHYS; Base-Horehound.

The Characters are;

It hath a labiated Flower consisting of one Leaf, whose Upper-lip is somewhat arch'd and erect, and the Under-lip is cut into three Segments, the middle one being larger than the other two; out of the Flower-cup rises the Pointal, attended by four Embryo's, which afterwards become so many Seeds, which are roundish, and inclos'd in a Husk, which before was the Flower-cup: To these Marks may be added, downy, hoary Leaves.

The Species are;

1. STACHYS; *major, Germanica.* C. B. P. Greater German Base-Horehound.

2. STACHYS; *Cretica.* C. B. P. Base-Horehound of Candia.

3. STACHYS; *Cretica, latifolia.* C. B. P. Broad-leav'd Base-Horehound of Candia.

4. STACHYS; *minor, Italica.* C. B. P. Lesser Italian Base-Horehound.

5. STACHYS; *Canariensis, frutescens, verbasci folio.* Tourn. Canary

shrubby Base-Horehound, with a Mullein Leaf.

There are several other Species of this Plant which are preserv'd in some curious Botanick Gardens for Variety; but as they have little Beauty or Use, I shall not enumerate them here.

The four Sorts first mentioned do seldom abide longer than two or three Years; for after they have produced Flowers and Seeds, the old Roots are very apt to decay, unless part of their Flower-stems are taken off early in the Summer, which will cause them to break out again at Bottom, whereby the Roots may be preserved.

They are all propagated by Seeds, which should be sown in March, upon a Bed of light, fresh Earth, and when the Plants are come up, they may be planted out into other Beds about six Inches asunder, observing to water 'em until they have taken Root, after which they will require no farther Care, but to keep 'em clear from Weeds, 'till Michaelmas, when they should be transplanted where they are to remain, which must be in an open Situation, and upon a dry, light Soil, not too rich, in which they will endure the Winter much better than in a rich, strong Soil. The Summer following these Plants will flower, and in August their Seeds will ripen, when they may be gathered and preserv'd 'till Spring for sowing.

The fifth Sort is a shrubby Plant, which with us rises to be six or seven Feet high; this is propagated by sowing the Seeds upon a Bed of light, fresh Earth (as the former) and when the Plants are come up, they must be transplanted into Pots fill'd with fresh, light, sandy Soil, placing 'em in a shady Situa-

Situation until they have taken Root, after which they may be removed into a more open Exposure; but in dry Weather must be frequently water'd: In this Place they may remain until the Middle or latter End of *October*, when they must be removed into the Green-house, placing them in the coolest part, where they may have as much free Air as possible, and must be often water'd, otherwise they will soon decay.

In Summer Time these Plants will require to be shifted twice, adding fresh Earth to their Roots; and if they are only shelter'd from hard Frost in Winter, it will be sufficient, for they are very hardy. The second Year after sowing, they will produce Flowers and Seeds, and will continue so to do every Year after; and although their Flower has no great Beauty, yet, for the Variety of its large, soft, woolly Leaves, it deserves a Place amongst other exotick Plants.

STAPHYLODENDRON; Bladder-nut.

The Characters are;

The Flower consists of several Leaves, which are placed circularly, and expand in Form of a Rose; out of whose many-leav'd Flower-cup rises the Pointal, which afterwards becomes a membranous Fruit, somewhat like the inflated Bladder of Fishes, and divided into two or three Cells, containing Seeds in Form of a Skull.

The Species are;

1. **STAPHYLODENDRON**; *sylvestre & vulgare*. H. L. The common wild Bladder-nut.

2. **STAPHYLODENDRON**; *Virginianum trifoliatum*. H. L. Three-leav'd Virginian Bladder-nut.

3. **STAPHYLODENDRON**; *Africanum, folio singulari, lucido*. Par. Bat.

African Bladder-nut with single shining Leaves.

The first of these Trees is found wild in the Woods and other shady Places near *Pontefract* in *Yorkshire*, and in some other Northern Parts of *England*; but near *London* it is preserved in the Gardens of those who are curious in collecting the various Kinds of hardy Trees.

The second Sort is a Native of *America*, but is so hardy as to endure the severest Cold of our Climate in the open Air, and produces Flowers and Fruit as plentifully in *England* as the common wild Sort.

Both these Kinds may be propagated by sowing their Seeds early in the Spring, in Beds of light, fresh Earth, and when the Plants are come up, they must be carefully kept clear from Weeds, and in very dry Weather if they are now and then refresh'd with Water, it will greatly promote their Growth; in these Beds they may remain until *March* following, at which Time they should be carefully taken up and planted in a Nursery, placing 'em in Rows three Feet asunder, and the Plants eighteen Inches distance in the Rows; observing to lay a little Mulch upon the Surface of the Ground about their Roots, to prevent the Sun and Wind from penetrating the Ground to dry them, and if the Spring should prove very dry, it will be convenient to give 'em a little Water, to encourage their taking Root; after which they will require no farther Care, but to keep the Ground clear from Weeds in Summer, and every Spring to prune off irregular Branches, and dig the Ground between the Rows, to loosen the Earth, that their Roots may the more easily extend. In this Nursery they may remain two

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or three Years, by which Time it will be proper to transplant them out where they are to remain, either in Wilderness Quarters, or in Clumps of various Trees, where they will add to the Diversity. The best Season for transplanting these Trees is in the Spring, just before they begin to shoot, though they may be transplanted in *October* and *November*, as is practis'd for other deciduous Trees.

These do commonly grow in *England* to the Height of twelve or fourteen Feet, so should be plac'd with other Trees of the same Growth.

They may also be propagated by laying down their tender Branches, which will take Root in the Compass of one Year, and may afterwards be taken off and transplanted, as hath been directed for the *Seedling* Plants.

The *African* Sort does not produce Seeds in this Country, as I could ever observe; so is only propagated by laying down the tender Branches in the Spring, observing to notch 'em at a Joint, as is practis'd in laying down Carnations. These, if duly water'd in dry Weather, will take Root in the Compass of one Year, and may the succeeding Spring be taken off, and transplanted into Pots, fill'd with light, fresh, rich Earth, and placed in a shady Part of the Green house, until they have taken Root, and in *May* they should be carried into the open Air, placing 'em amongst other exotick Plants, in a warm Situation. During the Summer Season they must be frequently watered, and when their Roots have fill'd the Pots, they should be remov'd into larger, observing always in shifting these Plants, to pare off the Earth and Fibres on the Outside of the Ball,

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before they are placed into the other Pots, which must also be filled up with the same light rich Earth as before directed. In Winter they must be housed with *Oranges*, *Myrtles*, &c. being too tender to endure the Cold of our Climate in the open Air, but do require no artificial Warmth in Winter; and though the Flowers of this Tree (which it often produces in *England*) are not very beautiful, yet as it retains its Leaves all the Winter, which have a very shining Appearance, when the Trees are train'd up to regular Heads, it adds greatly to the Beauty of a Green-house, when intermix'd with exotick Plants, and deserves a Place in every good Collection.

STAR-WORT; *vide* After.

STAR-FLOWER; *vide* Ornithogalum.

STATICE; Thrift, or Sea Pink.

The Characters are;

It is a Plant with a Flower gathered into an almost spherical Head, furnish'd with a common scaly Empalement. This Head is composed of several Clove-Gilly-flower Flowers, consisting of several Leaves in a proper Empalement, shap'd like a Funnel. In like manner the Pointal rises out of the same Empalement, and afterwards turns to an oblong Seed, wraps up in the Empalement as in a Husk.

The Species are;

1. STATICE; *Lugd.* Thrift, Sea-Gilliflower, or Sea-Cushion.

2. STATICE; *montana, minor, Tourn.* Lesser Mountain Thrift, or Sea-Gilliflower.

3. STATICE; *foliis angustioribus, flore rubro. Boerb. Ind.* Narrow-leav'd Thrift, with red Flowers.

4. STATICE; *foliis angustioribus, flore albo. Boerb. Ind.* Narrow-leav'd Thrift, with a white Flower.

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5. STATICE; *Lusitanica, fruticosa maritima, magno flore.* Tourn. Shrubby Portugal Sea Thrift, with a large Flower.

The first of these Plants grows wild in *Germany*, and some other Inland Countries in great Plenty, from whence it hath been brought into *England*; but the second Sort is found wild in great Plenty in the Salt Marshes near the Sea, in divers Parts of *England*.

The third and fourth Sorts have been brought into *England* from the *Alps*, or some other mountainous Parts, and are preserv'd for the Beauty of their Flowers in some old Gardens.

The fifth Sort is less common in *England* than either of the former Sorts, and is only to be found in the Gardens of such as are curious in collecting rare Plants.

The first four Sorts have been promiscuously planted in Gardens, to make Edgings on the Sides of Borders in the Flower-Gardens, for which Purpose they were formerly in great Esteem, but of late they have been very justly rejected for that Use, because there was a Necessity of transplanting these Edgings every Year, otherwise they could not be kept within due Bounds; besides, where-ever a Plant fail'd, which was no extraordinary thing, there always appear'd a large unsightly Gap. However, though they are not in Use at present for that Purpose, yet a few Plants of the first, third, fourth, and fifth Sorts should have a Place in some Part of the Flower-Garden, for Variety, especially the third and fourth, which are extreme hardy Plants, and will grow in almost any Soil or Situation, and their Flowers will continue a long Time in Beauty.

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All these Sorts may be propagated by parting their Roots, the best Time for which is in Autumn, that they may take Root before the Frost, which will cause 'em to flower much stronger than those transplanted in the Spring, and the Plants will not be in so much Danger of miscarrying as those are, especially when the Spring happens to prove dry. After these Plants have taken Root, they will require no farther Care, but to keep them clear from Weeds, and the May following they will begin to flower, which will continue in Beauty three Weeks or a Month, provided the Season be not too hot and dry.

The *Portugal* Sort is not so hardy as either of the former, tho' it will endure the Cold of our ordinary Winters very well in the open Air, provided it is planted in a dry Soil and a warm Situation, but in very severe Frosts it is often destroy'd. This may also be propagated by Cuttings or Slips, which should be planted in a Bed of fresh Earth in the Spring, and water'd and shaded until they have taken Root; after which they must be kept clear from Weeds till *Michaelmas*, when they should be planted either in Pots to be shelter'd in Winter, or in some warm Situation in the full Ground, where they may remain to flower.

This Plant will grow two or three Feet high, and become shrubby, provided it be not injur'd by Cold.

STOCK-GILLY-FLOWER; *vide* Leucojum.

STOECHAS; *Cassidony, French Lavender, or Stickadore.*

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose upper Lip is upright, and cut in two, but the under Lip (or Beard) is cut into three Parts; but both are so divided

as at first to appear like a Flower cut into five Segments; out of whose Flower-cup rises the Pointal, attended by four Embryo's, which afterwards becomes so many roundish Seeds inclosed in the Flower-cup. To these Marks must be added, that the Flowers are ranged in a various Series into scaly Heads, out of the Top of which peep some small Leaves, which look very beautifully.

The Species are;

1. STOECHAS; *purpurea*. C. B. P. Purple *Stæchas* or *Cassidony*, commonly call'd, Arabian *Stæchas*.

2. STOECHAS; *folio serrato*. C. B. P. *Cassidony*, or French Lavender, with a serrated Leaf.

3. STOECHAS; *cauliculis non foliatis*. C. B. P. *Cassidony*, or French Lavender, with long naked Flower-stalks.

The Heads of Flowers of the first Kind are used in some of the capital Medicines directed by the College of Physicians, which are commonly brought from the South Parts of France, where the Plants are in great Plenty; but these are very apt to take a Mouldiness in their Passage, and so are not near so good for use as those which are gather'd fresh in England, where the Plants may be cultivated to great Advantage.

The second and third Sorts are preserv'd in many curious Gardens for Variety, but they are not of any use.

All these Plants may be cultivated by sowing their Seeds upon a Bed of light, dry Soil in March; and when the Plants are come up, they should be carefully clear'd from Weeds until they are two Inches high, at which Time they should be remov'd; therefore there must be a Spot of light, dry Ground prepar'd, and laid level, which must

be trodden out in Beds, into which the Plants should be planted at about five or six Inches Distance each Way, observing to water and shade them until they have take Root, after which they will require no further Care, but to keep them clear from Weeds the following Summer; but if the Winter should prove very severe, it will be proper to cover them with Mats, *Pease-haulm*, or some other light Covering to guard them against the Frost, which otherwise would be apt to injure them while they are so young: But in March, or the Beginning of April, the following Spring, they must be remov'd into the Places where they are to remain, observing, if possible, to transplant them in a warm moist Season, and not to let them remain long above Ground, for if their Roots are dry'd, they seldom grow well after. The Soil in which these are planted should be a dry, warm Sand or Gravel, and the poorer the Soil is in which they are planted, the better they will endure the Cold of the Winter, provided the Ground be dry; tho' indeed the Plants will thrive better in Summer upon a rich, moist Ground; but then they will not produce so many Flowers, nor will the Plant afford near so strong an aromattick Scent; as is the Case with most Sorts of aromattick Plants.

These Plants may also be propagated by planting Slips or Cuttings of any of the Kinds in the Spring, observing to refresh them with Water until they have taken Root, after which they may be manag'd as hath been directed for the seedling Plants; but as those Plants raised from Seeds are much better than these, it is hardly worth while to propagate them this way, especially

cially since their Seeds do ripen so well in this Country.

The Heads of the first Sorts may be gather'd for use when the Flowers are in full Perfection, and spread to dry in a shady Place, after which they may be put up for use.

STONECROP; *vide* Sedum.

STOVES are Contrivances for the preserving such tender Exotick Plants, which will not live in these Northern Countries without artificial Warmth in Winter. These are built in different Methods, according to the Ingenuity of the Artist, or the different Purposes for which they are intended; but in *England* they are at present reducible to two.

The first is call'd a *Dry Stove*, being so contriv'd, that the Flues thro' which the Smoak passes are either carry'd under the Pavement of the Floor, or else are erected in the Back-part of the House, over each other, like Steps: In these *Stoves* the Plants are placed on Shelves of Boards laid on a Scaffold above each other, for the greater Advantage of their standing in Sight, and enjoying an equal Share of Light and Air. In these *Stoves* are commonly placed the tender Sorts of *Aloes*, *Cerus's*, *Euphorbiums*, *Tithymals*, and other succulent Plants, which are impatient of Moisture in Winter, and therefore require to be kept in a separate *Stove*, and not placed among Trees or herbaceous Plants, which perspire freely, and thereby often cause a damp Air in the House, which is often imbib'd by the succulent Plants to their no small Prejudice. These *Stoves* may be regulated by a *Thermometer*, so as not to over-heat them, nor to let the Plants suffer by Cold; in order to which, all such Plants as require nearly the same Degree of

Heat should be placed by themselves in a separate House; for if in the same *Stove* there are Plants placed of many different Countries, which require as many different Heats, by making the House warm enough for some Plants, others by having too much Heat, are drawn and spoil'd.

The other Sort of *Stoves* are commonly call'd *Bark-Stoves*. to distinguish them from the *Dry-Stoves* already mention'd. These have a large Pit, nearly the Length of the House, three Feet deep, and six or seven Feet wide, according to the Breadth of the House; which Pit is fill'd with fresh *Tanners-Bark* to make a Hot-bed, and in this Bed the Pots of the most tender Exotick Trees and Herbaceous Plants are plung'd; the Heat of this Bed being moderate, the Roots of the Plants are always kept in Action, and the Moisture detain'd by the Bark keeps the Fibres of their Roots in a ductile State, which in the *Dry-Stove*, where they are placed on Shelves, are subject to dry too fast, to the great Injury of the Plants. In these *Stoves* (if they are rightly contriv'd) may be preserv'd the most tender Exotick Trees and Plants, which, before the Use of the Bark was introduced, were thought impossible to be kept in *England*: But as there is some Skill requir'd in the Structure of both these *Stoves*, I shall not only describe them as intelligibly as possible, but also annex a Plan of the *Bark-Stove* hereto, by which it is hoped every curious Person will be capable of directing their Workmen in their Structure.

The Dimension of this *Stove* should be proportion'd to the Number of Plants intended to be preserv'd, or the particular Fancy of the Owner; but their Length should
not

not exceed forty Feet, unless there are two Fire-places, and in that case it will be proper to make a Partition of Glass in the Middle, and to have two Tan-pits, that there may be two different Heats, for Plants from different Countries (for the Reasons before given in the Account of *Dry-Stoves*); and were I to erect a Range of *Stoves*, they should be all built in one, and only divided with Glass Partitions, which will be of great Advantage to the Plants, because they may have the Air in each Division shifted by sliding the Glasses of the Partitions, or by opening the Glass-door, which should be made between each Division, for the more easy Passage from one to the other.

This *Stove* should be rais'd above the Level of the Ground, in proportion to the Dryness of the Place; for if it be built on a moist Situation, the whole should be plac'd upon the Top of the Ground; so that the Brickwork in Front must be rais'd three Feet above the Surface, which is the Depth of the Bark-bed, whereby none of the Bark will be in Danger of lying in Water: but if the Soil be dry, the Brickwork in Front need not be more than one Foot above Ground, and the Pit may be sunk two Feet below the Surface. Upon the Top of this Brick-work in Front must be laid the Plate of Timber, into which the Wood-work of the Frame is to be fasten'd, and the upright Timbers in Front must be placed four Feet asunder or somewhat more, which is the Proportion of the Width of the Glass-doors or Sashes; these should be about six Feet and a half or seven Feet long, and plac'd upright; but from the Top of these should be sloping Glasses, which should reach

within three Feet of the Back of the *Stove*, where there should be a strong Crown-piece of Timber placed, in which there should be a Groove made for the Glasses to slide into. The Wall in the Back-part of the *Stove* should be thirteen Inches thick, and carry'd up about nine Feet above the Surface of the Bark-bed; and from the Top of this Wall there should be a sloping Roof to the Crown-piece where the Glasses slide in. This Crown-piece should be about twenty Feet high from the Surface of the Bark-bed or Floor, which will give a sufficient Declivity to the sloping Glasses to carry off the Wet, and be of a reasonable Height for to contain many tall Plants. The Back-roof may be slated, cover'd with Lead, or tiled, according to the Fancy of the Owner: But the manner of this outside Building is better express'd by the annex'd Plan, than is possible to be describ'd in Words.

In the Front of the House there should be a Walk about twenty Inches wide, for the Conveniency of walking, next to which the Bark-pit must be plac'd, which should be in Width proportionable to the Breadth of the House: If the House is twelve Feet wide, which is a due Proportion, the Pit may be seven Feet wide; and behind the Pit should be a Walk eighteen Inches wide, to pass in order to water the Plants, &c. then there will be twenty-two Inches left next the Back-Wall to erect the Flues, which must be all rais'd above the Top of the Bark-bed; these Flues ought to be sixteen Inches wide in the Clear, that they may not be too soon stopped with the Soot; and the lower Flue, into which the Smoak first enters from the Fire, should

should be two Feet deep in the Clear, and this may be cover'd either with Cast Iron Plates or broad Tiles; over this the second Flue must be return'd back again, which may be eighteen Inches deep, and cover'd on the Top as before; and so in like manner the Flues may be return'd over each other five or six times, that the Heat may be spent before the Smoak passes off. The Thickness of the Wall in Front of these Flues need not be more than four Inches, but must be well jointed with Mortar, and plaister'd withinside to prevent the Smoak from getting into the House, and the Outside should be faced with Mortar, and cover'd with a coarse Cloth, to keep the Mortar from cracking, as is practis'd in setting up Coppers; if this be carefully done, there will be no Danger of the Smoak entering the House, which can't be too carefully avoided; for there is nothing more injurious to Plants than Smoak, which will cause them to drop their Leaves, and if it continue long in the House, will intirely destroy 'em.

The Fire-place may be made either at one End, or in the Middle, according as there is most Conveniency, for where-ever it is plac'd, it should have a Shed over it, and not be expos'd to the open Air; for it will be impossible to make the Fire burn equally, where the Wind has full Egress to it, and it will be troublesome to attend the Fire in wet Weather, where it is expos'd to the Rain.

The Contrivance of the Furnace must be according to the Fuel which is design'd to burn; but as Turf is the best Firing for Stoves, where it can be had, because it burns more moderately, and lasts longer than any other Sort of Fuel,

and so requires lesser Attendance, I shall describe a proper Sort of Furnace for that Purpose.

The whole of this Furnace should be erected within the House, which will be a great Addition to the Heat, and the Front-Wall on the Outside of the Fire-place, next the Shed, should be two Bricks thick, the better to prevent the Heat from coming out that Way. The Door of the Furnace, at which the Fuel is put in, must be as small as conveniently may be to admit of the Fuel; and this Door should be plac'd near the upper Part of the Furnace, and made to shut as close as possible, so that there may but little of the Heat pass off thro' it. This Furnace should be about twenty Inches deep, and twenty Inches square at Bottom, but may be slop'd off on every Side, so as to be two Feet and a half square at the Top; and under this Furnace should be a Place for the Ashes to fall into, which should be about a Foot deep, and as wide as the Bottom of the Furnace; this should also have an Iron Door to shut as close as possible; but just over the Ash-Hole, above the Bars, which support the Fuel, should be a square Hole about four Inches wide, to let in Air to make the Fire burn; this must also have an Iron Frame, and a Door to shut close when the Fire is perfectly lighted, which will make the Fuel last the longer, and the Heat will be more moderate.

The Top of this Furnace should be nearly equal to the Top of the Bark-bed, that the lowest Flue may be above the Fire, so that there may be a greater Draught for the Smoak, and the Furnace should be cover'd with a large Iron Plate, closely cemented to the Brick-work, to prevent the Smoak from getting out;

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out; and you should be very careful, where-ever the Fire is plac'd, that it be not too near the Bark-bed; for the Heat of the Fire will, by its long Continuance, dry the Bark, so that it will lose its Virtue, and be in Danger of taking Fire; to prevent which, it will be the best Method to continue a Hollow between the Brick-work of the Fire and that of the Pit, about eighteen Inches wide, which will effectually prevent any Damage arising from the Heat of the Fire; and there should be no Wood-work plac'd any where near the Flues or the Fire-place, because the continual Heat of the Stove may in Time dry it so much as to cause it to take Fire, which ought to be very carefully guarded against.

The Entrance into this Stove should be either from a Green-house, the dry Stove, or else thro' the Shed where the Fire is made, because in cold Weather the Front Glasses must not be open'd. The Inside of the House should be clean white-washed, because the whiter the Back-part of the House is, the better it will reflect the Light, which is of great Consequence to Plants, especially in Winter, when the Stove is oblig'd to be shut up close.

Over the Top Sliding-Glasses there should be either wooden Shutters, or Tarpawlins to roll down over them in bad Weather, to prevent the Wet from getting thro' the Glasses, and to secure them from being broke by Storms of Hail, and these outer Coverings will be very serviceable to keep out the Frost; and if in very severe Cold there is a Tarpawlin hung before the upright Glasses in the Front, it will be of great Service to the Stove, and a much less Fire will preserve a Heat in the House.

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In the warmest of these Houses or Divisions should be plac'd the most tender Exotick Trees and Plants, a List of which is as followeth:

Acajou or Cashew,
Allegator Pear,
Allspice or Pimento,
Arrow Root,
Bananas,
Bastard Cedar of Barbados,
Bastard Locust of Barbados,
Bully Tree,
Button Wood of Barbados,
Cabbage Tree,
Cocoa Tree,
Calibash Tree,
Cassada,
Cassia Fistula,
Cedar Tree of Barbados,
Cherry Tree of Barbados,
Cocoa-nut Tree,
Cortex Winteranus,
Custard Apple,
Date Tree,
Dumb Cane,
Fiddle wood,
Fig Tree, the Arched Indian,
Flower-fence of Barbados,
Fustick Tree,
Ginger,
Guajacum,
Guayava Tree,
Logwood,
Macaw Tree,
Mamee Tree,
Manchineel Tree,
Mimosa or Sensitive Plants,
Nickar Tree or Bonduc,
Palm Trees of several Sorts,
Papaw Tree,
Plantane Tree,
Plum Tree of Jamaica,
Sapotilla Tree,
Sope Berry Tree,
Sowre Sop,
Sugar Apple,
Sweet Sop,
Tamarind Tree.

These,

These, with most other Sorts of Trees, Shrubs, and Herbaceous Plants from very hot Countries, should be plung'd in the Bark-bed for the Reasons already assign'd; and upon the Top of the Flues may be set the *Anana* or *Pine-Apple* Plants in Winter, as also the *Melon-Thistle*, the tender Sorts of *Cereus's* and *Euphorbiums*, with other very tender succulent Plants, which require to be kept dry in Winter.

As in this *Stove* are plac'd the Plants of the hottest Parts of the *East* and *West-Indies*, so the Heat should be kept up equal to that mark'd *Anana* upon Mr. *Fowler's* *Thermometers*, and should never be suffer'd to be above eight or ten Degrees cooler at most, nor should the Spirit be rais'd above ten Degrees higher in the Thermometer; both which Extreams will be equally injurious to the Plants in the Winter Season.

But in order to judge more exactly of the Temper of the Air in the *Stove*, the Thermometer should be hung up at a good Distance from the Fire, nor should the Tube be expos'd to the Sun, but on the contrary, the Back hung thereto, because whenever the Sun shines upon the Ball of the Thermometer but one single Hour, it will raise the Liquor in the Tube considerably, when perhaps the Air of the House is not near so warm; which many times deceives those who are not aware of this.

In the Management of the Plants placed in the Bark-bed, there must be a particular Regard had to the Temper of the Back and the Air of the House, that neither be too violent; as also to water 'em frequently, because when they are in a continual Warmth, which will cause 'em to perspire freely, if they have

not a constant Supply to answer their Discharge, their Leaves will decay, and soon fall off. As to the farther Directions concerning the Culture of the particular Plants, the Reader is desir'd to turn to their several Articles, where they are distinctly treated of.

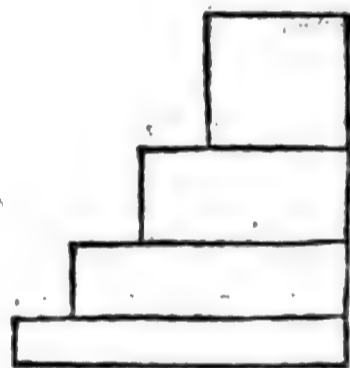
The other Sort of *Stove*, which is commonly call'd the *Dry Stove* (as was before said) may be either built with upright and sloping Glasses at the Top, in the same Manner, and after the same Model of the *Bark-Stove*; or else the front Glasses, which should run from the Floor to the Ceiling, may be laid sloping, to an Angle of 45 Degrees, the better to admit the Rays of the Sun in Spring and Autumn: The latter Method has been chiefly follow'd by most Persons who have built these Sort of *Stoves*; but were I to have the Contrivance of a *Stove* of this Kind, I would have it built after the Model of the *Bark-Stove*, with upright Glasses in Front, and sloping Glasses over them, because this will more easily admit the Sun at all the different Seasons; for in Summer, when the Sun is high, the Top Glasses will admit the Rays to shine almost all over the House; and in Winter, when the Sun is low, the Front Glasses will admit its Rays; whereas when the Glasses are laid to any Declivity in one Direction, the Rays of the Sun will not fall directly thereon above a Fortnight in Autumn, and about the same Time in Spring; and during the other Parts of the Year they will fall obliquely thereon; and in Summer, when the Sun is high, the Rays will not reach above five or six Feet from the Glasses: Besides, the Plants plac'd toward the Back-part of the House will not thrive in the Summer Season for want of Air,

Air, whereas when there are sloping Glasses at the Top, which run within three Feet of the Back of the House, these, by being drawn down in hot Weather, will let in perpendicular Air to all the Plants; and of how much Service this is to all Sorts of Plants, every one who has had Opportunity of observing the Growth of Plants in a *Stove*, will easily judge: For when Plants are plac'd under Cover of a Ceiling, they always turn themselves toward the Air and Light, and thereby grow crooked; and if in order to preserve them strait, they are turn'd every Week, they will nevertheless grow weak, and look pale and sickly, like a Person shut up in a Dungeon; for which Reasons I am sure whoever has made Trial of both Sorts of *Stoves*, will readily join with me to recommend the Model of the *Bark-Stove* for every Purpose.

As to the farther Contrivance of this *Stove*, it will be necessary to observe the Temper of the Place; whether the Situation be dry or wet; if it be dry, then the Floor need not be rais'd above two Feet above the Level of the Ground; but if it be wet, it will be proper to raise it three Feet, because as these Flues are to be carry'd under the Floor, so when they are made under, or close upon the Surface of the Ground, they will raise a Damp, nor will the Flues draw so well as when they are more elevated. The Furnace of this *Stove* may be either plac'd at one End of the House, or at the Back-part thereof, according to the Conveniency of the Building. This must be made according to the Fuel intended to burn, which, if for Coals or Wood, may be made according to the common Method for Coppers, but only

much larger, because as the Fire is to be continu'd in the Night chiefly, so if there is not Room to contain a great Quantity of Fuel, it will occasion a great deal of Trouble in tending upon the Fire in the Night, which should be avoided as much as possible, because whenever the Trouble is made very great or difficult, and the Person who is intrusted with the Care of it has not a very great Affection for the Thing, and is withal not very careful, there will be great Hazard of the Fire being neglected, which in a little Time would be of dangerous Consequence to the Plants: But if the Fuel intended be Turf, then the Contrivance of the Furnace may be the same as for the *Bark-Stove* already mention'd.

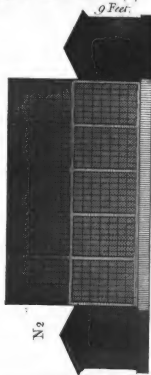
In this *Stove* there should be a Stand or Scaffold erected for placing Shelves above each other in the Manner annex'd, that the Plants may



be dispos'd above each other, so as to make a handsome Appearance in the House; but these Shelves should be made moveable, so as to be rais'd or sunk, according to the various Heights of the Plants, otherwise it will be very troublesome to raise or sink every particular Plant according to their Heights, every Year as they advance.

This Stand or Scaffold should be plac'd in the Middle of the House, leaving a Passage about two Feet

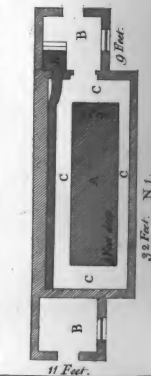
A Plan of the Stove.



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An explanation of the Draught.

- N 1 Is the Plan.
- A The pit for y^e Bark.
- B Sheds at each end one where y^e Fire is kept y^e other for a Tool house in order to make y^e draught uniform.
- C The distance from the Bark Pit to y^e inside Wall.
- D The funnel w^{ch} comes from y^e Front.
- E Where y^e fire is kept w^{ch} passes thro' all y^e Flues in y^e back Wall.
- F Is y^e Chimney where the Smoke is carried off after having Pass'd the Flues.
- N 2 Is y^e Elevation of y^e Front.
- N 3 Is y^e Elevation of one end w^{ch} shows y^e Slope of y^e Glass & y^e Angle w^{ch} it makes with y^e Front.



11 Feet.

32 Feet. N 1.



N³

7 Feet.



and a half in the Front, and another of the same Width in the Back, for the more conveniently passing round the Plants to water them, and that the Air may freely circulate about them. In disposing the Plants, the tallest should be plac'd backward, and the smallest in Front, so that there will not be Occasion for more than five or six Shelves in Height at most; but the Scaffold should be so contriv'd, that there may be two Shelves in Breadth laid upon every Rise whenever there may be Occasion for it, which will save a deal of Trouble in disposing of the Plants.

In the Erection of these *Stoves*, it will be of great Service to join them all together, with only Glass Partitions between them, (as was before observ'd;) and where several of these *Stoves* and *Greenhouses* are requir'd in one Garden, then it will be very proper to have the *Greenhouse* in the Middle, and the *Stoves* at each End, either in the Manner directed in the Plan of the *Greenhouse* exhibited in that Article, or carry'd on in one strait Front: And in the Contrivance of these it may be so order'd, that upon opening an Iron Regulator plac'd at the End of the Flue of the *Stove*, and stopping another plac'd at the Entrance of the back Flue, the Smoak may be made to pass thro' the *Greenhouse* in extream hard Frost, which will be sufficient to prevent it ever freezing in the House: For want of which Contrivance, it is hardly possible to keep out the Frost in very severe Winters.

By this Contrivance in the Structure of these Houses, a Person may pass from one to the other of them without going into the open Air; which, besides the Pleasure to the Owner, is also of great Use,

because there will be no Occasion of making a Back-way into each of them, which otherwise must be, because the Front Glasses of the *Stoves* should not be open'd in cold Weather, if it can possibly be avoided on any Account, because the cold Air rushing in, will greatly prejudice the very tender Plants.

But besides the *Stoves* here describ'd, and the *Green-house*, it will be very necessary to have a Glass-Case or two, where-ever there are great Collections of Plants. These may be built exactly in the Manner already describ'd for the *Stoves*, with upright Glasses in Front, and sloping Glasses over the Top of them, which should run within four Feet of the Back of the House. The Height, Depth, and other Dimensions should be conformable to that of the *Stoves*, which will make a Regularity in the Building. These may be plac'd at the End of the Range on each Hand beyond the *Stoves*; and if there be a Flue carry'd along under the Floor of each, which may be open'd in severe Frost, (in the manner already directed for that under the *Greenhouse*) and the Smoak of the adjoining *Stove* made to pass off through these, it will save a great deal of Labour, and prevent the Frost from ever entering the House, be the Winter ever so severe: But the upper Glasses of these Houses should have either Shutters to cover them, or else Tarpawlins to let down over them in frosty Weather; and if there is a Contrivance to cover the upright Glasses in Frost, either with Mats, Shutters, or Tarpawlins, it will be of great Use in Winter, otherwise the Flue must be open'd when the Frost comes on, which should not be done but upon extraordinary Occasions; because the Design of these Houses is, to

keep such Plants as require only to be preserv'd from Frost, and need no additional Warmth, but, at the same time, require more Air than can conveniently be given them in a Greenhouse: In one of these Houses may be plac'd all the Sorts of *Ficoides*, *African Sedums*, *Cotyledons*, *Senecio's*, and other Succulent Plants from the *Cape of Good Hope*. In the other may be plac'd the several Kinds of *Anemonospermos*, *Jacobaea's*, *Doria's*, *Alaternoides's*, and other woody or herbaceous Plants from the same Country, or any other in the same Latitude.

Thus by contriving the Greenhouse in the Middle, and two Stoves and a Glass-Case at each End, there will be Conveniency to keep Plants from all the different Parts of the World, which can be no otherwise maintain'd but by placing them in different Degrees of Heat, according to the Places of their native Growth.

STRAMONIUM; Thorn-Apple.

The Characters are;

The Flower consists of one Leaf, shap'd like a Funnel, and cut into several Segments; out of the Flower-cup rises the Pointal, which, when the Flower decays, becomes a roundish Fruit, armed for the most part with sharp Thorns, and divided into four Cells form'd by a Partition, dispos'd in the Figure of a Cross, furnish'd with four Placenta's or nutritive Membranes, to which several Kidney-shap'd Seeds do adhere.

The Species are;

1. STRAMONIUM; *fructu spinoso, rotundo, flore albo simplici*. Tourn. Thorn-Apple, with a round prickly Fruit, and a single white Flower.

2. STRAMONIUM; *fructu spinoso, oblongo, caule & flore violaceo*. Boerh. Ind. Thorn-Apple, with a longish

prickly Fruit, and Violet-colour'd Stalks and Flowers.

3. STRAMONIUM; *ferox*. Boccon. Thorn-Apple, with very long, sharp Prickles.

4. STRAMONIUM; *Americanum, minus, Alkekengi folio*. Tourn. Lesser American Thorn-Apple, with a Winter-Cherry Leaf.

5. STRAMONIUM; *Malabaricum, fructu glabro, flore simplici violaceo*. Tourn. Malabar Thorn-Apple, with a smooth Fruit, and a single Violet-colour'd Flower.

6. STRAMONIUM; *fructu spinoso rotundo, flore violaceo duplici vel triplici*. Tourn. Thorn-Apple, with a round, prickly Fruit, and Violet-colour'd Flowers, which are two or three times double.

There are some other Species of this Plant which are preserv'd in some curious Botanick Gardens, but as they have little Beauty or Use, so I shall not enumerate them in this Place. The first Sort is used to make a cooling Ointment, which is by many Persons greatly esteem'd. This, tho' not a Native of this Country, yet is now become so common upon Dunghills and other rich Grounds, as not to be easily eradicated. The Seeds falling, do continue all the Winter in the Ground, and in Spring the Plants will come up, and, if suffer'd to stand, will spread over the whole Spot of Ground, and produce such Quantities of Seeds as to leave a Stock to furnish the Ground for some Years.

The second Sort is not as yet quite so common as the former, tho' it is equally as hardy; and where the Seeds are permitted to fall, the Plants will come up in great Plenty the following Summer. This Sort will grow much larger than the former. I have measured

measured one of these Plants which grew upon a rich Soil upward of six Feet high, and divided into many strong Branches, which spread almost eight Feet Diameter; so that 'tis unfit to stand in small Pleasure-Gardens, and only to have a Place in some outward Part of a Garden or Yard, because it takes up too much Room.

The third Sort is somewhat like the former in the Appearance of the Plant, but the Fruit is smaller, and beset with very long, fierce Thorns; for which Variety it is preserved in the Gardens of those who are curious in *Botany*.

This *Species* is by some suppos'd to be the *Dutro* of the *Persians*, with the Seeds of which they use to intoxicate Persons on whom they have any Designs.

This Sort is not quite so hardy as the two former, so must be sown on a moderate Hot-bed in the Spring; and when the Plants are come up, they should be transplanted on a new Hot-bed to bring the Plants forward, but you must be careful not to draw them too much by keeping the Glasses close, which will render them very weak and unfit to stand abroad: Therefore after they have taken Root, they should have Plenty of fresh Air when the Weather is warm, and in *May* they should be inur'd to the open Air by degrees, into which they may be transplanted in *June*, observing to raise the Plants with a large Ball of Earth, and plant them in a rich Soil, giving them Water until they have taken Root. In *July* these Plants will flower, and their Seeds will ripen in *August*.

The fourth Sort will grow larger than the last mention'd. This is preserv'd more for the sake of

its long, tubulous, white Flowers than any other Beauty in the Plant. It is somewhat tender, and should be sowed on a Hotbed in the Spring, and manag'd as the former, otherwise, if the Season proves cold, the Seeds will not ripen; tho' I have sometimes had Plants of this kind which came up from Seeds that scatter'd in *Autumn*, and ripen'd their Seeds well; so that I believe, in a few Years, it may be inur'd to this Climate, so as to thrive with little Care.

The fifth and sixth Sorts do produce very beautiful Flowers, which afford an agreeable Scent at some Distance, but if smelt to very close are offensive to the Head. The Flowers of these Kinds are Violet-colour'd on the Outside, but are white on the Inside; and those of the sixth Sort have two or three Flowers within each other, in the manner of the *Primrose*, which is called *Hose in Hose*. These two Sorts are much more tender than either of the former, and must be sown early in the Spring on a Hot-bed; and when the Plants are come up, they must be transplanted into a fresh Hot-bed to bring them forward; and as the Heat of this Bed declines, there should be a fresh one prepar'd, in which should be plung'd Pots fill'd with light, rich Earth, into which the Plants should be plac'd, observing to water and shade them until they have taken Root; after which they should have Air given to them, in Proportion to the Heat of the Season, and must be often water'd, being very thirsty Plants.

Thus they must be pushed on by Heat, in the manner directed for *Amaranth*s; to which the Reader is desir'd to turn for their farther Culture. In *July*, if the Sea-

son be warm, they may be remov'd into the open Air, placing them in a warm Situation, where they will produce their Flowers Plentifully; and if the *Autumn* be warm, their Seeds will ripen very well; but it will be a sure Method to preserve one Plant of each Kind under Glasses, lest those in the open Air should not perfect their Seeds.

STRAWBERRY; *vide* *Fragaria*.

STRAWBERRY - TREE; *vide* *Arbutus*.

STYRAX; The Storax-Tree.

The *Characters* are;

The Flower consists of one Leaf, shap'd like a Funnel, and cut into several Segments; out of whose Flower-cup rises the Pointal, which is fix'd like a Nail in the fore-part of the Flower; this afterwards becomes a roundish, fleshy Fruit, including one or two Seeds in hard Shells.

We have but one *Species* of this Plant, *viz.*

STYRAX; *folio Mali Cotonei*. C. B. P. Storax-Tree, with a Quince-Tree Leaf.

This Plant grows plentifully in several Parts of *Asia*, from whence it hath been brought into many curious Gardens in *Europe*, though at present it is very rare in *England*.

It may be propagated by sowing the Seeds in Pots fill'd with fresh, light Earth, and plung'd into a moderate Hot-bed: This should be done as soon as possible, when the Seeds are procur'd; for if they are sown the latter End of Summer, and the Pots kept in a moderate Hot-bed of Tanners Bark all the Winter, the Plants will come up the succeeding Spring; whereas those sown in the Spring do often remain in the Ground a whole Year before the Plants come up.

When the Plants are up, they should be each transplanted into a separate small Pot, fill'd with light, fresh Earth, and plung'd into a very moderate Hot-bed, observing to water and shade them until they have taken Root; after which they should be inur'd to the open Air by degrees, into which they must be remov'd in *June*, placing them in a warm Situation, in which Place they may remain till the Beginning of *October*; at which Time they should be remov'd into the Green-house, placing them where they may enjoy the Benefit of fresh Air when the Weather is mild; for these Plants are tolerably hardy, and do only require to be shelter'd from severe Frost, for in *Italy* they grow extremely well in the open Air, and produce Fruit in great Plenty; from whence I receiv'd a Parcel of the Seeds: But as the Plants do grow very slowly with us, so it would be a good Way to procure some from *Italy*, which might be brought over in the Spring, pack'd up in Cases with Moss, as is practis'd in bringing over *Orange-Trees*, *Jasmines*, &c. and these Plants being well grown before they are brought over, will be more hardy than those rais'd from Seeds here, and will be more likely to produce Fruit.

The *Resin* of this Tree is brought over for Medicinal Use.

I shall beg Leave to add another Tree in this Place, which altho' very different in its Characters from the foregoing, yet as it hath not been settled to any particular Genus by the *Botanists*, and having long pass'd under the Name of *Storax*, I shall continue it by that Name in this Place, having the Authority of Mr. Ray for so doing.

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STYRAX; *arbor, Virginiana, aceris folio. Raii Hist.* The Virginian *Storax*-Tree, with a Maple Leaf, commonly call'd, Liquid-Amber.

This Tree grows very plentifully in *America*, from whence the Seeds have been brought into *England*, where there has been a great Number of Plants rais'd therefrom, which are found to be hardy enough to endure the Cold of our ordinary Winters in the open Air: And it is very probable, as the Trees grow larger, and more woody, so they will the better resist the Cold; but while they are young, the tender Branches are very subject to perish with severe Frost.

This Plant may be propagated by sowing the Seeds in the Spring in Pots fill'd with fresh, light Earth, which should be plung'd into a moderate Hot-bed, and duly water'd; when the Plants are come up (which sometimes happens in six Weeks after sowing, though often they remain in the Ground until the second Year; in which Case, the Earth of the Pots should not be disturb'd until you see whether the Plants will come up or not) they should be carefully kept clear from Weeds, and water'd frequently; and in *June* they should be remov'd into the open Air, placing them in a warm Situation, where they may remain until *October*; at which Time they should be plac'd in a common Hot-bed Frame, where they will be protected from severe Frost: But the Glasses being kept off in mild Weather, they may enjoy the free Air.

Towards the latter End of *March*, or the Beginning of *April*, these Plants may be taken out of the Pots, and planted into the full Ground: In order to which, a Bed or two of light, fresh Earth should

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be prepar'd in a warm Situation, into which the Plants may be planted at about a Foot asunder each Way, which will be full Room enough for 'em to grow two Years; and being plac'd so close, they may be much easier cover'd, if the Winter should prove very severe.

When they are planted, the Surface of the Ground must be cover'd with Mulch, to prevent the Wind and Sun from drying the Ground too fast; and if the Season proves dry, it will be proper to water them now and then until they have taken Root, after which they will require no farther Care but to keep them constantly clear from Weeds until *November* following; when it will be proper to lay a little fresh Mulch upon the Surface of the Ground to keep out the Frost; and if the Winter should be very severe, the Plants must have a little *Peas-Haulm*, or some Mats thrown over them to protect them from the Frost.

In these Beds the Plants may remain two Years; after which they should be remov'd in the Spring to the Places where they are to remain, or else into a Nursery, where they must be planted at a greater Distance, so as to have Room to grow two or three Years longer. These Trees will grow very vigorously after they have stood two or three Years; so that when their Roots have acquired Strength, they will make great Progress in their Growth: With us they will grow to be upward of twenty Feet high, so should be plac'd amongst Trees of the same Growth, and in a warm Situation.

The Leaves of this Tree do sweat out a liquid Resin in hot Weather, which when rubbed between the Fingers, emits a fragrant Scent;

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but I have not seen any Flowers produc'd in *England* as yet.

SUBER; The Cork-Tree.

The Characters are;

It is in all respects like the *Ilex*, excepting the Bark of the Tree, which in this is thick, spongy, and soft.

The Species are;

1. SUBER; *latifolium, perpetuo virens*. C. B. P. The Broad-leav'd ever-green Cork-Tree.

2. SUBER; *angustifolium, non serratum*. C. B. P. The narrow-leav'd Cork-Tree, with smooth Edges.

There are several other Species of this Tree mention'd in some of the *Italian Catalogues* of Plants; but the two Sorts here mention'd are all I have observ'd in the *English Gardens*.

These Trees may be propagated by sowing their Acorns in the Spring, in the manner directed for the *Ilex*, to which these exactly agree in Culture; therefore, to avoid Repetition, the Reader is desir'd to turn to that Article for farther Instruction.

SUCCORY; *vide* Cichorium.

SUMACH; *vide* Rhus.

SYCAMORE; *vide* Acer Majus.

SYMPHYTUM; Comfrey.

The Characters are;

The Flower consists of one Leaf, shap'd like a Funnel, having an oblong Tube, but shap'd at the Top like a Pitcher; out of the Flower-cup (which is deeply cut into five long, narrow Segments) rises the Pointal, attended with four Embryo's, which afterwards become so many Seeds, in Form somewhat like the Head of a Viper, and do ripen in the Flower-cup.

The Species are;

1. SYMPHYTUM; *consolida, major, foemina, flore albo, vel pallide luteo*. C. B. P. The greater Female Com-

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frey, with a white or pale-yellow Flower.

2. SYMPHYTUM; *consolida, major, mas, flore purpureo*. C. B. P. The greater Male Comfrey, with a purple Flower.

3. SYMPHYTUM; *majus tuberosa radice*. C. B. P. Greater Comfrey, with a tuberosé Root.

There are some other Species of this Plant which are preserv'd in some curious Botanick Gardens for Variety, but those here mention'd are what I have chiefly observ'd in *England*.

The first Sort grows wild upon the Sides of Banks and Rivers in divers Parts of *England*, where it is commonly gather'd to supply the Markets for Medicinal Use. The second Sort is sometimes found wild in *England*, but is less common than the former; in *Holland* it is the only Sort I observ'd wild, where it grows in great Plenty on the Sides of the Canals almost every where.

The third Sort I never yet observ'd growing wild, but it is preserv'd in many Gardens for Variety.

All these Plants may be cultivated, either by sowing their Seeds in the Spring, or by parting of their Roots; the latter Way, being the most expeditious, is chiefly practis'd, where they are planted for Use. The best Season for parting their Roots is in *Autumn*, at which Time almost every Piece of a Root will grow: They should be planted about eighteen Inches asunder, that they may have Room to spread, and will require no farther Care but to keep them clear from Weeds, for they are extream hardy, and will grow upon almost any Soil, or in any Situation.

SYRINGA;

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SYRINGA; The Mock-Orange; *vulgô.*

The Characters are;

The Flower, for the most part, consists of five Leaves, which are plac'd circularly, and expand in Form of a Rose; from whose Flower-cup rises the Pointal, which afterwards becomes a roundish Fruit adhering to the Flower-cup, divided into four Cells, which are full of small Seeds.

The Species are;

1. **SYRINGA**; *alba*, five *Philadelphus Athenæi*. C. B. P. The common white *Syringa* or Mock-Orange.

2. **SYRINGA**; *flore albo pleno*. C. B. P. The double white *Syringa*.

3. **SYRINGA**; *flore albo simplici, foliis ex luteo variegatis*. The strip'd-leav'd *Syringa*.

4. **SYRINGA**; *nana, nunquam florens*. The Dwarf *Syringa*.

The first Sort is very common in most *English* Gardens, but the second is not quite so plenty, though, indeed, it is a Variety scarce worth observing, since the Flowers are always single where they are produc'd in Bunches; and where they are produc'd singly, they are double: But this so rare, that many times upon a large Shrub there can't be found six double Flowers.

The variegated Sort is preserv'd in the Gardens of such as are curious in strip'd Plants, tho' there is no great Beauty in it, because when the Plants are vigorous, the Stripes in the Leaves do scarcely appear.

The Dwarf Sort is not worth a Place in a Garden, unless for the Sake of Variety, since it never produces any Flowers.

All these Plants may be easily propagated, by taking off their

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Suckers in *Autumn* (which they produce very plentifully) and planting them out in a Nursery at three Feet Distance Row from Row, and a Foot asunder in the Rows, observing to keep the Ground between them constantly clear from Weeds, as also to dig it up every Spring to loosen it, that the Roots of the Plants may more readily extend themselves. In this Nursery they may remain two Years, by which Time they will be fit to transplant out where they are to remain; which may be into small Wilderness-Quarters, or amongst flowering Shrubs in Clumps, observing to place them with other Sorts of Shrubs of the same Growth, for these seldom do grow above six or seven Feet high in *England*, and the Dwarf Sort not more than three or four.

They are extream hardy, so may be planted in almost any Soil or Situation, and will require no farther Culture but to take off the Suckers every Year, and cut out the dead Wood, as also to keep them clear from Weeds in Summer, and dig the Ground about their Roots every Winter, which will make them thrive and flower very plentifully. The Season of their Flowering is in *May*, and in cool Seasons they do continue in Beauty the first Part of *June*: Their Flowers have a Scent somewhat like those of the *Orange-Tree*, from whence it had the Name of *Mock-Orange*: But if these are plac'd in a close Room, or are smelt to too closely, they have a strong disagreeable Scent, and too powerful for the Ladies; but when they are in the open Air, the Scent is not so affecting.

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TAGETES; African or French Marygold.

The Characters are;

The Flower is radiated, consisting of divers Florets, which are plain, and cut into several Segments; but the Disk of the Flower consists of half Florets, which stand upon the Embryo's; the Flower-cup consists of one Leaf, is tubulous, and encloses the Embryo's, which afterwards become angular Seeds, with a Leaf upon the Head of each.

The Species are;

1. TAGETES; *maximus, rectus, flore simplici ex luteo pallido.* J. B. Greatest upright African Marygold, with a single, pale, yellow Flower.

2. TAGETES; *maximus, rectus, flore maximo multiplicato.* J. B. Greatest upright African Marygold, with a large double Flower.

3. TAGETES; *maximus, rectus, flore maximo multiplicato, aurantii coloris.* Greatest upright African Marygold, with a very large double Orange-colour'd Flower.

4. TAGETES; *maximus, rectus, flore maximo multiplicato, sulphureo coloris.* Greatest upright African Marygold, with a very large double Brimstone-colour'd Flower.

5. TAGETES; *maximus, rectus, flore maximo multiplicato, pallide luteo, odorato.* Greatest upright African Marygold, with a very large double Flower, of a pale, yellow Colour, and a sweet Scent.

6. TAGETES; *maximus, rectus, flore maximo multiplicato, pallide luteo & fistuloso.* Greatest upright

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African Marygold, with a large, double, pale, yellow, and piped Flower, commonly call'd, The Quilled African.

7. TAGETES; *Indicus, medius, flore simplici, luteo-pallido.* J. B. Indian middle French Marygold, with a single, pale, yellow Flower.

8. TAGETES; *Indicus, medius, flore luteo. multiplicato.* H. L. The middle French Marygold, with a double yellow Flower.

9. TAGETES; *Indicus, minor, simplici flore, sive Caryophyllus Indicus sive flos Africanus.* J. B. Lesser or Common French Marygold, with a single Flower, call'd Indian Clove July-flower.

10. TAGETES; *Indicus, minor, multiplicato flore.* J. B. Double French Marygold; *vulgô.*

11. TAGETES; *Indicus, flore simplici, fistuloso.* H. L. Single French Marygold, with a piped Flower.

12. TAGETES; *Indicus, flore fistuloso, duplicato.* H. L. Double French Marygold, with a piped Flower.

13. TAGETES; *Indicus, minimus, flore sericea hirsutie obfuso.* H. L. The least French Marygold, with a soft hairy Flower.

All these Plants are annual, so must be propagated from Seeds every Spring, which may be sown upon a moderate Hot-bed in March; and when the Plants are come up, they should have Plenty of fresh Air, for if they are drawn too much, they will not afterward become handsome, notwithstanding they have all possible Care taken of them. When they are about three Inches high, they should be transplanted on a fresh Hot-bed, which may be arched over with Hoops, and covered with Mats (for these Plants are hardy enough to be brought up without Glasses :) In this Bed they should be planted about

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bout six Inches asunder each Way, observing to water and shade them until they have taken Root; but as the Plants do acquire Strength, so they should be inur'd to bear the open Air by Degrees; and about the Beginning of *May*, they should be taken up, with a Ball of Earth to the Root of each Plant, and plac'd in a Nursery in a warm Situation, about eighteen Inches asunder, observing to water and shade them until they have taken Root, and in very dry Weather, the Waterings should be repeated: In this Nursery they may remain until their Flowers appear, so as to distinguish those with double Flowers: which may be taken up with a Ball of Earth to each Plant, and planted into the Borders of the Parterre Garden, or into Pots, for furnishing the Courts, &c. where the several Varieties being intermix'd with other annual Plants, do afford an agreeable Variety.

Those with single Flowers should be pull'd up, and thrown away as good for little, because the Seeds produc'd from them will rarely produce double Flowers; therefore great Care should be taken to save only the Seeds of those whose Flowers are very double of every kind, from which there will always be a good Quantity of double ones produc'd, tho' from the very best Seeds there will always be many single Flowers; but the small Sorts do always produce a greater Number of double Flowers than the large, which are more apt to degenerate.

These Plants have a strong, disagreeable Scent, especially when handled; for which Reason they are not so greatly esteem'd for planting near Habitations: but the Flowers of the sweet-scented Sort

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being more agreeable, are mostly coveted to plant in small Gardens. All these Sorts do begin to flower in *May*, and continue all the latter Part of the Year, until the Frost prevents their Flowering: for which, together with the little Trouble requir'd in their Culture, they have greatly obtain'd in most *English* Gardens.

TAMARINDUS; The Tamarind-Tree.

The *Characters* are;

The Flower consists of several Leaves, which are so plac'd as to resemble a papilionaceous one in some measure; but these expand circularly: From whose many-leav'd Flower-cup rises the Pointal, which afterwards becomes a flat Pod, containing many flat angular Seeds, surrounded with an acid, blackish Pulp.

We have but one Species of this Tree; viz.

TAMARINDUS; *Rail Hist.* The Tamarind-Tree.

There are some who imagine the Tamarind-Tree of the *East-Indies*, and that of the *West-Indies* to be different, but I don't remember to have seen them distinguish'd by any Botanick Author; though, indeed, from the different Appearance of the Pods, they seem very different; for the Pods which I have seen of the *East-Indian* Sort were very long, and contain'd six or seven Seeds in each; whereas those of the *West-Indies* do rarely contain more than three or four: but from the Plants which I have rais'd from both Sorts of Seeds, I can't distinguish them asunder as yet.

These Trees do grow to a great Magnitude in their native Countries; but in *Europe* they are preserv'd as Curiosities by those who are Lovers of rare Plants.

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They are easily propagated by sowing their Seeds on a Hot-bed in the Spring; and when the Plants are come up, they should be planted each into a separate small Pot fill'd with light rich Earth, and plung'd into a Hot-bed of Tanners-Bark, to bring 'em forward, observing to water and shade them until they have taken Root; and as the Earth in the Pots appears dry, so they must be water'd from time to time, and should have Air given to them in Proportion to the Warmth of the Season, and the Bed in which they are plac'd: When the Pots in which they are planted are fill'd with their Roots, the Plants should be shifted into Pots of a larger Size, which must be fill'd up with rich light Earth, and again plung'd into the Hot-bed, giving them Air, as before, according to the Warmth of the Season: But in very hot Weather the Glasses should be shaded with Mats in the Heat of the Day, otherwise the Sun will be too violent for them through the Glasses: Nor will the Plants thrive if they are expos'd to the open Air, even in the warmest Season, so that they must be constantly kept in the Bark-stove both Winter and Summer, treating them, as hath been directed, for the *Anana's*, with whose Culture they will thrive exceedingly.

These Plants, if rightly manag'd, will grow very fast, for I have had 'em upwards of three Feet high in one Summer from Seed, and had one Plant which produc'd Flowers the same Season it was sown; but this was accidental, for I have never since had any of them flower, altho' I have several Plants of different Ages, one of which is several Years old, and about seven

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Feet high, with a large spreading Head.

TAMARISCUS: The Tamarisk-Tree.

The *Characters* are;

The *Flowers* are *rosaceous*, consisting of several *Leaves*, which are plac'd orbicularly; from whose Flower-cup rises the Pointal, which afterwards becomes a Pod (somewhat like those of the Sallow) which opens into two Parts, and contains several downy Seeds.

The *Species* are;

1. **TAMARISCUS; Narbonnensis.** Lob. Icon. The French or narrow-leav'd Tamarisk-Tree.

2. **TAMARISCUS; Germanica.** Lob. Icon. The German Tamarisk.

These Trees are preserv'd in the Gardens of those who are curious in collecting the various kinds of Trees and Shrubs; but they have not much Beauty to recommend them; for their Branches are produc'd in so straggling a manner, as not by any Art to be train'd up regularly, and their Leaves are commonly thin upon the Branches, and do fall away in Winter, so that there is nothing to recommend them but their Oddness.

They may be easily propagated, by laying down their tender Shoots in the Spring, or by planting Cuttings in an East Border at that Season, which, if supply'd with Water in dry Weather will take Root in a short time, but they should not be remov'd until the following Spring; at which Time they may be either plac'd in a Nursery, to be train'd up two or three Years, or else into the Quarters where they are design'd to remain, observing to mulch their Root, and water them according as the Season may require, until they have taken Root; after which,

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the **only** Culture they will require, is, to prune off the straggling Shoots, and keep the Ground clean about them.

These Plants delight in a sandy Soil, not over rich, and should be plac'd amongst Shrubs of a middling Growth, for they rarely grow above fifteen or sixteen Feet high in *England*, but are very hardy in respect to Cold.

TAMNUS; the Black Briony.

The Characters are ;

It is Male and Female in different Plants; the Flowers of the Male Plant consist of one Leaf, and are Bell-shap'd, but these are barren; the Embryo's are produced on the Female Plants, which afterwards becomes an oval Berry, including roundish Seeds. To these Notes should be added, that these Plants have no Claspers, as the White Briony hath.

We have but one Species of this Plant in *England*, viz.

TAMNUS; *racemosa, flore minore luteo pallascente*. Tourn. The common Black Briony.

This Plant is rarely cultivated in Gardens, but grows wild under Hedges in divers Parts of *England*, and is there gather'd for medicinal Use. It may be easily propagated by sowing the Seeds soon after they are ripe, under the Shelter of Bushes, where, in the Spring, the Plants will come up, and spread their Branches over the Bushes, and support themselves, requiring no farther Care; and their Roots will abide many Years in the Ground, without decaying.

TANACETUM; Tanfy.

The Characters are ;

It hath a flosculous Flower, consisting of many Florets, divided into several Segments sitting on the Embryo, and contained in a squamous

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and hemispherical Empalement; the Embryo afterwards becomes a Seed, not at all downy. To these Notes must be added, thick Flowers gather'd into a kind of Head.

The Species are ;

1. **TANACETUM**; *vulgare luteum*. C. B. P. Common Tanfy.

2. **TANACETUM**; *foliis crispis*. C. B. P. Curled or Double Tanfy.

3. **TANACETUM**; *vulgare, foliis variegatis*. Common Tanfy with strip'd Leaves.

4. **TANACETUM**; *vulgare luteum maximum*. Boerb. Ind. The largest Common Tanfy.

5. **TANACETUM**; *Africanum, arboreescens, foliis Lavendula, multifido folio*. H. Am. African shrubby Tanfy with Leaves like the multifid Lavender.

The first and second Sorts are very common in *England*, being promiscuously cultivated in Gardens for the Use of the Kitchen; but the first should be propagated for medicinal Use. The third Sort is a Variety of the first, which is by some preserved for the Sake of its variegated Leaves. The fourth Sort is very like the Common in Appearance, but is much larger, and has less Scent.

All these Sorts are easily propagated by their creeping Roots, which if permitted to remain undisturb'd, will in a short Time over-spread the Ground where they are planted; so that the Slips should be placed at least a Foot asunder, and in particular Beds, where the Paths round them may be often dug, to keep their Roots within Bounds. They may be transplanted either in Spring or Autumn, and will thrive in almost any Soil or Situation.

The common Tanfy is greatly used in the Kitchen early in the Spring, at which Season that which

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is in the open Ground, or especially in a cold Situation, is hardly forward enough to cut; so that where this is much wanted at that Season, it is the best Way to make a gentle Hot-bed in *December*, and plant the old Roots thereon, without parting 'em, and arch the Bed over with Hoops, to cover it with Mats in cold Weather, by which Method the *Tansy* will come up in *January*, and be fit to cut in a short Time after.

The fifth Sort was brought from the *Cape of Good-Hope*, and is preserved in the Gardens of those who are curious in collecting exotick Plants. This may be propagated by planting Cuttings or Slips, during any of the Summer Months, upon a Bed of light rich Earth, observing to water and shade 'em until they have taken Root, after which they may be taken up, and planted in Pots filled with light fresh Earth, placing them in a shady Situation until they have taken new Root, and then they may be exposed in an open Place, amongst other exotick Plants, until the Beginning of *October*, when they must be removed into the Green-house, observing to place 'em in the coolest Part thereof, and as near the Windows as possible, that they may enjoy the free Air in mild Weather, otherwise they will draw up weak, and be liable to grow mouldy, and decay.

They must also be frequently watered, but in very cold Weather they must not have too much Water given them at each Time, tho' in Summer they should have it in Plenty. With this Management (together with observing to shift 'em into larger Pots, as they shall require it) the Plants will grow large, and produce a great

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Quantity of Flowers, which commonly appear early in the Spring, and thereby greatly add to the Variety of the Green-house.

TAN or TANNERS BARK, is the *Bark* of the Oak-tree, chopped and ground into coarse Powder, to be used in Tanning or Dressing of Skins; after which it is of great Use in Gardening: First, by its Fermentation (when laid in a Body) which is always moderate, and of a long Duration, which renders it of great Service to Hot-beds; and secondly, after it is well rotted, it becomes excellent Manure for all Sorts of cold stiff Land, upon which one Load of *Tan* is better than two of the best rotten Dung, and will continue longer in the Ground.

The Use of *Tan* for Hot-beds has not been very many Years known in *England*, and was brought over first from *Holland*, where it had been long used for those Purposes: I have been informed that it was first used in *England* for raising Orange-trees, which was about the Beginning of King *William's* Reign; but it was disused long after that, and it is within fifteen or sixteen Years past, that it was again brought into Use, for raising the Pine-Apple; since which Time it has yearly grown more in Use for Hot-beds; and I doubt not but in a few Years it will be generally used for those Purposes, where-ever it can be procured easily.

There are commonly two or three Sorts of *Tan*, which are ground into Powder of different Sizes, some being in very gross Pieces, and others are ground very fine; these are different in their Effects when laid to ferment, for the small Sort will heat more violently, but will lose its Heat in a short Time,

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Time, but the large Sort being moderate in Fermentation, does continue its Heat a long Time: So that whoever makes a Hot-bed of *Tan*, must proportion a Mixture of each Sort according as they would have their Beds work; for if they intend to have a moderate Heat, and can stay a Fortnight or three Weeks for its beginning to ferment, they should use but very little small *Bark*: but where the Heat is wanted sooner, there should be a larger Proportion of the small *Bark*.

This *Tan* should be taken in a Fortnight's Time after it comes out of the Pit, and laid up in a round Heap for a Week, to drain; (especially if it be in Winter or Spring, while the Season is moist) after which it may be put into the Trench where the Hot-bed is design'd, which should be brick'd on the Sides quite round, to prevent the Earth from mixing with the *Bark*. These Trenches should be proportioned to the Size of the Frames which are to cover them, and the Depth in the Ground according to the Moisture of the Place where they are situated; for if the Ground is very wet, the Bed should be rais'd above the Surface of the Ground, because if ever the Water rises into the *Bark*, it will cool it so much as not to be brought again to its former Heat, without taking it out of the Trench again, and fresh mixing it up.

The Thickness which the *Bark* should be laid in the Trench, must not be less than three Feet, and the Width four Feet; for where it is laid in a less Body, it seldom heats, and if it is forced by laying hot Dung under it (as is sometimes practis'd) the Heat will soon decay: In laying the *Bark* into the

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Trench, you should be careful to stir up every Part of it, that it may not settle in Lumps; as also to press it down gently, but by no Means tread or beat it down too close, which will prevent its heating. Then the Glasses should be placed over the Bed immediately after it is finished, which should be kept close down, in order to draw a Heat in the *Bark*, and to prevent Wet from falling thereon; in a Fortnight's Time after, the *Bark* will begin to heat, and when it is found of a due Temper, the Plants may be removed into it.

A Hot-bed well prepared with this *Tan*, will continue a moderate Heat upward of six Months, and there being very little Steam arising from it, in comparison to Horse-dung, renders it much better for the Growth of all Sorts of Plants; and when the Heat begins to decay, if the *Tan* be fresh stirred up, and a little new added to it, it will heat again and continue some Months longer. The farther particular Directions for the Management of these Hot-beds, being already exhibited under the Article of *Hot-beds*, the Reader is desired to turn back to that for farther Instructions.

TARRAGON; *vide* Draco Herba.

TAXUS; the Yew-Tree.

The Characters are;

It hath amentaceous Flowers, which consist of many Apices, for the most part shap'd like a Mushroom, and are barren; but the Embryo's (which are produced at remote Distances on the same Tree) do afterwards become hollow, Bell-shap'd Berries, which are full of Juice, and include Seeds somewhat like Acorns, having, as it were, a little Cup to each.

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The Species are;

1. TAXUS; *f. B.* The common Yew-tree.

2. TAXUS; *folio latiori, magisque splendente.* Boerb. Ind. Yew-tree with a broader and more shining Leaf.

3. TAXUS; *foliis variegatis.* H. R. Par. The Yew-tree with strip'd Leaves.

The two first Sorts are often promiscuously cultivated in Gardens, without Distinction; but the third is preserved by some for the Sake of its variegated Leaves: Though there is very little Beauty in them; for during the Summer Season, when the Plants are in Vigour, the Stripes in the Leaves are hardly to be perceived, but in Winter they are more obvious; however, the Stripe being rather a Blemish than any real Beauty, it is hardly worth preserving.

There is hardly any Sort of ever-green Tree which has been so generally cultivated in the *English* Gardens, upon the Account of its being so tonile, as to be with Ease reduc'd into any Shape the Owner pleas'd, and it may be too often seen, especially in old Gardens, what a wretched Taste of Gardening did generally prevail, from the monstrous Figures of Beasts, &c. we find these Trees reduced into; but of late this Taste has been justly exploded by many Persons of superior Judgment: For what could be more absurd than the former Methods of planting Gardens? where, in the Part next the Habitation, were crowded a large Quantity of these and other Sorts of ever-green Trees, all of which were sheered into some trite Figure or other; which, besides the obstructing the Prospect from the House, occasion'd an annual Expence to render

the Trees disagreeable. For there never was a Person who had consider'd the Beauty of a Tree in its natural Growth, with all its Branches diffus'd on every Side, but must acknowledge such a Tree infinitely more beautiful than any of those shorn Figures, so much studied by Persons of a groveling Imagination.

The only Use I would recommend this Tree for in Gardens, is to form Hedges for the Defence of exotick Plants, for which Purpose it is the most proper of any Tree in Being: The Leaves being small, the Branches are produc'd very closely together, and if carefully shorn, they may be render'd so close, as to break the Winds better than any other Sort of Fence whatever, because they will not be reverberated, as against Walls, Pales, and other close Fences, and so consequently are much to be preferr'd for such Purposes.

These Trees may be easily propagated by sowing their Berries in Autumn, as soon as they are ripe (without clearing 'em from the Pulp which surrounds them, as hath been frequently directed) upon a Bed of fresh undung'd Soil, covering 'em over about half an Inch thick with the same Earth.

In the Spring the Bed must be carefully clear'd from Weeds, and if the Season prove dry, it will be proper to refresh the Bed with Water now and then, which will promote the Growth of the Seeds, many of which will come up the same Spring, but others will remain in the Ground until the Autumn or Spring following; but where the Seeds are preserved above Ground 'till Spring before they are sown, the Plants do never come up 'till the Year after, so that by sowing

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sowing the Seeds as soon as they are ripe, there is many times a whole Year saved.

These Plants, when they come up, should be constantly clear'd from Weeds, which if permitted to grow amongst 'em, would cause their Bottoms to be naked, and many times destroy the Plants when they continue long undisturb'd.

In this Bed the Plants may remain two Years; after which, in the Spring of the Year, there should be a Spot of fresh undung'd Soil prepared, into which the Plants should be removed the Beginning of April, placing 'em in Beds about four or five Feet wide, planting them in Rows about a Foot asunder, and six Inches Distance from each other in the Rows; observing to lay a little Mulch upon the Surface of the Ground about their Roots, as also to water them in dry Weather until they have taken Root, after which they will require no farther Care, but to keep 'em clear from Weeds in Summer, and to trim them according to the Purpose for which they are design'd.

In these Beds they may remain two or three Years, according as they have grown, when they should be again remov'd into a Nursery, placing 'em in Rows at three Feet Distance, and the Plants eighteen Inches asunder in the Rows, observing to do it in the Spring, as was before directed, and continue to trim 'em in the Summer Season, according to the Design for which they are intended; and after they have continued three or four Years in this Nursery, they may be transplanted where they are to remain, always observing to remove 'em in the Spring.

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These Trees are very slow in growing, but yet there are many very large Trees upon some barren cold Soils in divers Parts of England; the Timber of these Trees is greatly esteem'd for many Uses.

TEREBINTHUS; The Turpentine Tree.

The Characters are;

It is Male and Female in different Plants; the Flowers of the Male have no Petals, but consist of a Number of Stamina with Chives; the Embryo's which are produced on the Female Trees do afterwards become an Oval Fruit with a hard Shell, inclosing one or two oblong Kernels. To these Notes must be added, the Leaves are pennated, or winged, which are produced by Pairs opposite, and end in a single Lobe.

The Species are;

1. TEREBINTHUS; *vulgaris*. C. B. P. The common Turpentine Tree.

2. TEREBINTHUS; *Indica*, *Theophrasti*, *Pistachia Dioscoridis*. Lob. Adv. The Pistachia Tree, *vulgô*.

These Trees are very common in several Islands of the Archipelago, from whence there are annually great Quantities of the Pistachia Nuts brought into England, which do easily rise if sown on a Hot-bed in the Spring; so that the Trees of this Kind are much more common in England than are those of the first Sort, whose Fruit are rarely brought over fresh: Besides, the Shell of these Nuts is much harder than those of the Pistachia, so that many times the Plants do not come up until the second Year, which may also have contributed to the present Scarcity of the Plants in England.

The Seeds (or Nuts) of both these Trees should be sown in Pots fill'd with fresh, light Earth, and plung'd into

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into a moderate Hot-bed, observing to refresh the Earth with Water frequently, as it may have Occasion; and when the Plants are come up (which those of the *Pistachia* will do in six Weeks after sowing) they should be inur'd to bear the open Air by Degrees, into which they must be remov'd the Beginning of *June*, placing them where they may be screen'd from the Violence of the Winds, in which Situation they may remain until *October*, when they should be remov'd either into a common Hot-bed Frame, or else into a Green-house, where they may be defended from hard Frost, but should have as much free Air as possible in mild Weather, and must be frequently refresh'd with Water.

In *March* following these Plants should be remov'd, and each planted in a separate Pot, fill'd with fresh light Earth, and as the Spring advances, so they should be again remov'd into the open Air, and placed amongst other Exotick Plants, observing to water them frequently in dry Weather; and when their Roots are confin'd by the Smallness of the Pots, they must be shifted, being careful not to break the Earth off from their Roots, which will greatly injure them, unless it be done before the Plants begin to shoot in the Spring, for at that Season they may be transplanted with as much Safety as any other deciduous Trees.

In this Manner these Plants should be treated for three or four Years, while young, after which Time the *Pistachia's* may be planted into the full Ground, observing to place them in a warm Situation and dry Soil, where they will endure the Cold of our ordinary Winters very well, as may be seen by a very large

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Tree of this Kind, now growing in the Gardens of the Earl of *Peterborough*, at *Parson's-Green* near *Fulham*, which produces abundance of Fruit, without any manner of Care. Nor do I believe, but that the common *Turpentine Tree* would endure the Cold of our Climate, if after the Plants have acquir'd Strength, they are planted against a good Wall upon a dry Soil; for much Wet about the Roots of these Trees in Winter, is very often the Occasion of their rotting, whereby the Trees are destroy'd

TEUCRIUM; Tree Germander.

The Characters are;

The Flower-cup is divided into five Parts at the Top, but is of the Bell-shap'd Kind; the Flower has no Galea or Crest, but instead thereof, the Stamina occupy the upper Part; the Beard, or Lower-lip, is cut into five Parts, the middle Segment being larger, is hollowed like a Spoon; in the Center of the Flower rises the Pointal, attended by four Embryo's, which afterwards become so many Seeds, shut up in a Husk, which was before the Flower-cup. To these Notes should be added, the Flowers are produc'd from the Wings of the Leaves.

The Species are;

1. **TEUCRIUM**; *multis.* *J. B.* Common Tree Germander.

2. **TEUCRIUM**; *Bæticum.* *Clus. Hist.* Spanish Tree Germander.

3. **TEUCRIUM**; *Bæticum, calice campanulato, folio eleganter variegato.* *Boerh. Ind.* Spanish Tree Germander with a strip'd Leaf.

There are some other Species of this Plant, which are preserved in curious Botanick Gardens for Variety; but as they are of little Use or Beauty, it would be needless to enumerate them.

The

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The first Sort here mention'd was formerly preserved in Green-houses with great Care, but of late Years it hath been planted out into the open Air, and is found hardy enough to endure the Cold of our severest Winters without Shelter, provided it be planted on a dry Soil.

This may be propagated by planting Cuttings in the Spring, on a Bed of fresh light Earth, observing to shade and water them until they have taken Root, after which they will require no farther Care, but to keep them clear from Weeds until the following Spring, when they may be transplanted out into the Places where they are to remain, being careful in removing them, not to shake off all the Earth from their Roots, as also to water them until they have taken fresh Root, after which the only Care they require, is to keep the Ground clean about them, and to prune off such Shoots as are ill situated, whereby their Heads will appear more regular.

The Spanish Sort is tenderer than the former, though that will endure the Cold of our ordinary Winters, if planted on a dry Soil, and in a warm Situation; but in a severe hard Frost it is often destroy'd, for which Reason the Plants are generally preserved in Pots, and removed into the Green-house in Winter. This is propagated in the same Manner as the former.

The Sort with strip'd Leaves is less common than the plain; and is valued by those that delight in variegated Plants. This is somewhat tenderer than the plain Sort, but may be propagated and preserved in the same Manner, only observing to place it in a warmer Part of the Green-house in Winter.

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There is no very great Beauty in these Plants; but they are preserved for the Sake of Variety, by those who are curious in collecting the various Kinds of exotick Plants.

THALICTRUM; Meadow Rue.

The Characters are;

The Flower consists of several Leaves, placed orbicularly, which expand in Form of a Rose, in the Middle of which arise numerous Clusters of Chives, encompassing the Pointal, which afterwards becomes a Fruit, in which are collected, as in a little Head, the Capsules, which are sometimes winged and sometimes without Wings, each containing one Seed, for the most part oblong.

The Species are;

1. THALICTRUM; *Alpinum, aquilegie foliis, florum staminibus purpurascens*. Tourn. Alpine Meadow Rue with Columbine Leaves, and the Chives of the Flower of a purplish Colour, commonly called, the Feather'd Columbine.

2. THALICTRUM; *Alpinum majus, aquilegie foliis, florum staminibus albis, caule viridi*. Tourn. Greater Alpine Meadow Rue with Columbine Leaves, white Chives to the Flowers, and a green Stalk.

3. THALICTRUM; *Canadense, caule purpurascens, aquilegie foliis, florum staminibus albis*. Tourn. Canada Meadow Rue, with a purplish Stalk, Columbine Leaves, and white Chives to the Flower.

4. THALICTRUM; *Americanum minus*. Park. Theat. Lesser American Meadow Rue.

There are many other Species of this Plant, which are preserv'd in Botanick Gardens for Variety; some of which are Natives of England, but those above-mention'd are all the Sorts which I have observed to be cultivated in the Flower-Gardens

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for their Beauty. All these Sorts are commonly known by the Name of *Feather'd* or *Spanish Columbine* among the Gardeners, which Names I suppose, they received from the Similitude that the Leaves of these Plants bear to those of Columbine, though their Flowers are very different therefrom.

These Plants are propagated by parting their Roots; the best Time for this Work is in *September*, when their Leaves begin to decay, that they may take fresh Root before the Frost comes on to prevent them. They should also be planted in a fresh light Soil, and have a shady Situation, in which they will thrive exceedingly, though they may be planted in almost any Soil or Situation, provided it be not too hot and dry. These Roots should not be parted or removed oftener than every other Year, but if they are permitted to stand three Years, they will flower much stronger for it.

They may also be propagated by sowing their Seeds on an East Border, soon after they are ripe, observing to keep the Ground clear from Weeds; and the following Spring the Plants will come up, when they should be frequently refresh'd with Water, and constantly kept clean from Weeds; the Autumn following they may be planted out into Nursery-beds, about five or six Inches asunder, where they may remain until they have Strength enough to flower, when they should be removed into the Borders of the Flower-Garden, placing them in the middle Line among Plants of large Growth, allowing them Room, otherwise they will spread over whatever Plants are near them.

These Plants flower the Beginning of *June*, and if the Season be moderate they will continue in

Beauty a long Time: This, together with their being hardy Plants, which require little Culture, renders them worthy of a Place in every good Flower-Garden; and their Flowers are very proper to intermix with others for Basons to adorn Halls, Chimnies, &c. in the Summer Time.

THAPSIA; The Deadly Carrot.

There are several *Species* of this Plant, which are kept in Botanick Gardens, but as they are Plants of little Beauty, so it is not worth while to enumerate them in this Place; but whoever has a Mind to propagate them, may do it in the Manner directed for *Smyrneum*; which see.

THLASPI; Mithridate Mustard.

The *Characters* are;

The Flower consists of four Leaves, which are plac'd in Form of a Cross; out of whose Cup rises the Pointal, which afterward becomes a smooth, roundish Fruit, having commonly a leafy Border, and slit on the upper Side, divided into two Cells by an intermediate Partition plac'd obliquely with respect to the Valves, and furnish'd with smooth, roundish Seeds. To these Marks must be added, the undivided Leaves which distinguish it from Cresses.

The *Species* are;

1. THLASPI; *arvense, siliquis latis*. C. B. P. Field Mithridate Mustard, with broad Pods.

2. THLASPI; *montanum, semper-virens*. C. B. P. Mountain ever-green Mithridate Mustard.

3. THLASPI; *Creticum quibusdam, flore rubente & albo*. J. B. Candy Mithridate Mustard, with a reddish and white Flower, commonly called Candy Tuft.

4. THLASPI; *umbellatum, arvense amarum*. J. B. The bitter Field umbellated Mithridate Mustard.

5. THLASPI;

5. *THLAPSI*; *Rosa de Hierico* *di-Hum. Mor. Hist.* Mithridate Mustard, call'd The Rose of Jericho.

The first Sort is sometimes found wild in *England*, but not near *London*. This is the Sort which the College of Physicians have order'd the Seeds to be us'd in some of the grand Medicines of the Shops; tho' the Seeds of several other Plants are commonly substituted instead of it, because the Seeds of this Sort are not very common in *London*; but the Plants might be easily cultivated in such Plenty, as to furnish the Town with the right Sort, the Plant being extream hardy, and requires no other Culture but to sow the Seeds in *February* upon an open Spot of Ground; and when the Plants are come up, they must be constantly clear'd from Weeds: In *June* they will flower, and the Seeds will ripen soon after; when the Plants do always perish, being annual.

The other Sorts are commonly cultivated in Flower-Gardens, where formerly they were sown for Summer Edgings to Borders; but as they are apt to grow too rank for that Purpose, so the better Way is to sow the Seeds in small Patches in the Middle of the Borders between the taller Flowers; and when the Plants are come up, they should be thin'd, and kept clear from Weeds, which will cause them to flower much stronger than if they are drawn up weak.

These Plants do flower in *June* and *July*, and their Seeds do ripen soon after: But in order to have a Succession of these and other small annual Flowers, many Persons do sow them at two or three different Seasons, viz. in *March*, *April* and *May*; by which Means they continue them until the Frost comes

in Autumn; but those Seeds which are sown late in the Spring, should be carefully water'd in dry Weather, otherwise they seldom grow.

The red and white Candy Tufts, do vary so as not to be kept separate; the Seeds of the Red producing some white Flowers, and those of the White some with red ones; but of late, the *bitter umbellated* Sort has been cultivated in Gardens, and the Seeds sold in the Shops, by the Name of *White Candy Tuft*, tho', in reality, it is a different Plant: However, as this Sort produces beautiful white Flowers, it should have a Place in the Borders of the Flower-Garden for the Sake of Variety.

The *Rose of Jericho* is a Plant of no great Beauty or Use, so is seldom cultivated except in Botanick Gardens. This requires the same Culture as the former Sorts, and is also an annual Plant.

THLASPIDIUM; Bastard Mithridate Mustard.

The Characters are;

The Flower consists of four Leaves, which are plac'd in Form of a Cross, out of whose Cup rises the Pointal, which afterwards becomes a double, smooth Fruit, compos'd of two Parts, that are separated by an intermediate Partition, each of which swells with a red Seed, which is generally flat and oblong.

The Species are;

1. *THLASPIDIUM*; *fruticosum, leucoii folio, semperflorens. Tourn.* Shrubby *Thlaspidium*, with a Wall-flower Leaf, and always flowering, commonly call'd, The Candy Tuft-tree.

2. *THLASPIDIUM*; *fruticosum, leucoii folio variegato, semperflorens. Tourn.* The strip'd Candy-Tuft-tree; *vulgâ.*

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There are several other *Species* of this Plant which are preserv'd in curious Botanick Gardens, most of which are annual, and have little Beauty in their Flowers, therefore I shall not enumerate them in this Place, since they are rarely cultivated in Flower-Gardens.

The first of these Plants here mention'd is pretty common in the Gardens near *London*, where it is preserv'd in Green-houses with other Exotick Plants for the Beauty of its Flowers, which are commonly continu'd throughout the whole Year, making a very beautiful Figure in the Green-house at such Seasons when few other Plants are in Flower.

This Plant may be propagated by planting either Cuttings or Slips during any of the Summer Months, in Pots fill'd with fresh, light Earth, and plac'd under a Frame, observing to water and shade them until they have taken Root, after which they may be expos'd to the open Air, and when they have gotten strong Roots, they may be each transplanted into a separate Pot fill'd with light, fresh Earth, and may be plac'd amongst other hardy Exotick Plants in the open Air in Summer; but in Winter they must be screen'd from severe Frost, tho' in mild Weather they should have as much free Air as possible.

But altho' these Plants are generally preserv'd in Pots, and plac'd in a Green-house in Winter, yet after they have acquir'd Strength, they may be planted in warm, dry Borders; where, if the Soil be fresh, and not too rich, they will endure the Cold of our ordinary Winters very well without any Covering: And the Plants thus treated will flower much better than those kept in Pots.

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The strip'd Sort is propagated as the plain, and must be treated in the same Manner, but being somewhat tenderer, must be constantly shelter'd in Winter, otherwise it will be destroy'd in a small Frost.

THISTLE; *vide* Carduus.

THORN-APPLE; *vide* Stramonium.

THORN, the Glastenbury; *vide* Mespilus.

THUYA; The Arbor Vitæ, *vulgô*.

The Characters are;

The Leaves are ever-green, squamous, and compress'd, having small, oblong, squamous Cones growing upon the Backsides, in which the Seeds are contained.

The Species are;

1. THUYA; *Theophrasti*. C. B. P. The Arbor Vitæ, or Tree of Life.

2. THUYA; *Theophrasti, folio variegato*. The strip'd Arbor Vitæ, or Tree of Life.

The first Sort was formerly in greater Esteem than at present in the *English* Gardens; it is commonly rais'd in the Nurseries near *London*, where their Heads are sheered into a conical Figure; but since that low Taste of Gardening, in crowding vast Quantities of clipp'd Plants into Gardens, is justly exploded, these Trees do not meet with so good Reception as formerly: But notwithstanding this, there may be some of them planted in Gardens to great Advantage, if they are placed in Wildernesses, or Clumps of ever-green Trees, where these should be planted with other Sorts which are nearly of the same Growth; and in such Plantations the dull, heavy, green Colour of these Leaves, will be very useful in adding to the Lustre of those which are of a more lively Green, and make a fine Variety.

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The strip'd Sort is preserved by some who are curious in collecting such Varieties, but there is little Beauty in it.

These Trees may be propagated by laying down their tender Branches in the Spring of the Year, observing to slit 'em at a Joint, (as is commonly practis'd for Carnations) as also to water 'em in dry Weather, and keep 'em constantly clear from Weeds: If these Things be duly observed, the Layers will be rooted by the Spring following, at which Time they may be taken off, and transplanted into a Nursery in Rows three Feet asunder, and the Plants eighteen Inches Distance in the Rows; observing to lay a little Mulch upon the Surface of the Ground about their Roots, to prevent the Wind from drying it, and in dry Weather they should be often refresh'd with Water, until they have taken Root, after which they must be constantly kept clear from Weeds, and the Ground dug every Spring between the Rows, that their Roots may extend themselves on every Side. In this Nursery they may remain five or six Years, and may then be transplanted where they are to remain for good. The best Season to remove these Trees is about the Beginning of April, just before they shoot.

These Trees may also be propagated by Slips, which should be planted on a moist Soil in April, and if shaded in very hot, dry Weather, most of 'em will take Root, after which they must be treated as hath been directed for the Layers.

The Leaves of this Tree being bruised between the Fingers, emit a strong Scent, somewhat like Ointment; and I have been inform'd, that some Persons do make an

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Ointment thereof, which is esteem'd excellent for fresh Wounds. The Wood of this Tree is greatly esteem'd by the Turners, for making Bowls, Boxes, &c. But as the Tree is slow of Growth, and seldom arrives to any great Magnitude in this Country, (rarely growing above twenty Feet high), so it is not worth cultivating for its Timber.

THYMELÆA; Spurge Laurel, or Mezereon.

The Characters are;

The Flower consists of one Leaf, is for the most part Funnel-shap'd, and cut into four Segments, from whose Center rises the Pointal, which afterwards becomes an oval Fruit which is in some full of Juice, but in others is dry, in each of which is contained one oblong Seed.

The Species are;

1. THYMELÆA; *Laurifolia, sempervirens, seu Laureola Mas. Tourn.* The Spurge, or Dwarf Laurel.

2. THYMELÆA; *Laurifolia, sempervirens, foliis variegatis.* The strip'd Spurge Laurel.

3. THYMELÆA; *laurifolio deciduo, five Laureola fœmina. Tourn.* The common Mezereon.

4. THYMELÆA; *laurifolio deciduo, flore albedo, fructu flavescente. Tourn.* The Mezereon with white Flowers and yellowish Fruit.

5. THYMELÆA; *laurifolio deciduo, flore rubro.* The Mezereon with red Flowers.

6. THYMELÆA; *laurifolio deciduo, foliis ex luteo variegatis.* The common Mezereon with strip'd Leaves.

The first of these Plants is found wild in Woods and other shady Places in divers Parts of England, but is often cultivated in Gardens for Variety; where, if it is planted in Wildernesses or shady Walks, it will thrive very well; and being an Ever-green, and producing its Flow-

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ers in Winter, when few other Plants do flower, makes it the more acceptable. The second Sort is a Variety of the first, which is preserved for the Beauty of its strip'd Leaves.

Both these Plants may be propagated by Suckers taken from the old Plants, or by Layers, which should be taken off in Autumn, and planted in a strong Soil and shady Situation, where, after they have taken Root, they will require little farther Care.

The several Sorts of *Mezcreon* are propagated by sowing their Seeds, the best Season for which is in *August*, soon after they are ripe, when they begin to fall from the Trees: These should be sown upon an East Border, where they may have only the Morning Sun, and cover'd about half an Inch with fresh Earth; in the Spring the Plants will appear, when they must be carefully clear'd from Weeds, and in dry Weather should be often watered, which will greatly promote their Growth. In this Border they may remain two Years, by which Time they will be strong enough to transplant; when there should be a Spot of strong fresh Earth prepared for them, into which they should be planted in Autumn, in Rows three Feet distance, and the Plants eighteen Inches asunder in the Rows, treating 'em afterwards in the usual Manner with other Kinds of Shrubs, while in this Nursery; and when they are large enough to plant out for good, they may be taken up in Autumn, with a Ball of Earth to the Root of each Plant, and placed where they are to remain, which should be in a strong, moist Soil, and a shady Situation, where

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they will thrive and flower extremely well.

These Plants are great Ornaments to a Garden early in the Spring, before other Things are in flower, for if the Season is mild they often flower in *January*, but in *February* they are always in Perfection. They seldom grow to be more than five or six Feet high in *England*, so should be planted among other Shrubs of the same Growth.

The Sort with strip'd Leaves may be propagated by budding or inarching it upon the plain Sort, because the Seeds will not produce strip'd Plants.

THYMUS; Thyme.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose Upper-lip is erect, and generally split in two, and the Under-lip is divided into three Parts; out of the Flower-cup arises the Pointal, accompany'd by four Embryo's, which afterwards become so many Seeds, inclos'd in a Husk, which was before the Flower-cup. To these Marks must be added, hard ligneous Stalks, and the Flowers gather'd into Heads.

The Species are;

1. THYMUS; *vulgaris, folio latiore*. C. B. P. Common broad-leav'd Thyme.

2. THYMUS; *vulgaris, folio tenuiore*. C. B. P. Common narrow-leav'd Thyme.

3. THYMUS; *vulgaris, folio latiore variegato*. Broad-leav'd strip'd Thyme.

4. THYMUS; *capitatus, qui Dioscoridis*. C. B. P. The true Thyme of the Antients.

There are several other Species of *Thyme*, which are preserved in Botanick Gardens for Variety; but

as they are seldom cultivated for Use, so I shall not enumerate them in this Place. The Sort with broad Leaves is the most common in *England*; this is cultivated in the Kitchen-Gardens as a Soup Herb, and also for medicinal Use. The next two Sorts are preserved in many Gardens for Variety, being equally as good as the first for Use: But the fourth Sort is less common in *England* than either of the former.

These Plants may be propagated either by Seeds or parting their Roots; the Season for either is in *March*. If it is done by sowing the Seeds, it should be done upon a Bed of light Earth, observing not to bury the Seeds too deep, which will cause 'em to rot: When the Plants are come up they should be carefully clear'd from Weeds, and if the Spring should prove dry, if they are water'd twice a Week it will greatly promote their Growth; and in *June* the Plants should be thinned, leaving 'em about six Inches asunder each Way, that they may have Room to spread, and those Plants which are drawn out may be transplanted into fresh Beds at the same Distance, observing to water them until they have taken Root, after which they will require no farther Care, but to keep 'em clear from Weeds, and in the Winter following they may be drawn up for Use.

But if these Plants are propagated by parting their Roots, the old Plants should be taken up about the latter End of *March*, and split into as many Parts as can be taken off with Root; these should be transplanted into Beds of fresh light Earth, at six or eight Inches distance, observing if the Season is dry to water them until they have

taken Root, after which they must be duly weeded, and they will thrive, and soon be fit for Use.

In order to save Seeds of these Plants, some of the old Roots should remain unremoved in the Place where they were sown the preceding Year; these will flower in *June*, and in *July* the Seed will ripen, which must be taken as soon as it is ripe, and beat out, otherwise the first Rain will wash it all out of the Husks.

These Plants do root greatly in the Ground, and thereby draw out the Goodness of a Soil sooner than most other Plants; so that whatever is sown or planted upon a Spot of Ground whereon *Thyme* grew the preceding Year, will seldom thrive, unless the Ground be trench'd deeper than the *Thyme* rooted.

THYME THE LEMON; *vide* Serpillum.

THYME THE MASTICK; *vide* Mastichina.

TILIA; The Lime, or Linden-Tree.

The Characters are;

The Flower consists of several Leaves, which are placed orbicularly, and do expand in Form of a Rose, having a long, narrow Leaf, growing to the Foot-stalk of each Cluster of Flowers, from whose Cup rises the Pointal, which afterwards becomes a testiculated Fruit, consisting of one Capsule, containing an oblong Seed in each.

The Species are;

1. TILIA; *fœmina, folio majore*. C. B. P. The common or broad-leav'd Lime-tree.

2. TILIA; *fœmina, folio minore*. C. B. P. The small-leav'd Lime-tree.

3. TILIA; *foliis molliter hirsutis, viminibus rubris, fructu tetragono*.

Raili Syn. The red-twig'd Lime-tree.

4. *TILIA*; *Caroliniana*, *folio longius mucronato*. The Carolina Lime-tree.

5. *TILIA*; *fœmina*, *folio majore variegato*. The strip'd-leav'd Lime-tree.

The three first-mention'd Trees are very common in *England*, being cultivated in most Nurseries, but the *Carolina* Sort is not at present very common; this was sent from *Carolina* by Mr. *Mark Catesby*, in the Year 1726. but as yet there does not appear any considerable Difference from the common Sort. That with strip'd Leaves is preserv'd by some for the Sake of Variety, but there is no great Beauty in it.

All these Trees are easily propagated by Layers, which in one Year will take good Root, and may then be taken off and planted in a Nursery, at four Feet distance Row from Row, and two Feet asunder in the Rows; the best Time to lay 'em down and to remove 'em is at *Michaelmas*, when their Leaves begin to fall, that they may take Root before the Frost comes on, tho' they may be transplanted any time from *September* to *March* in open Weather; but if the Soil is dry, it is much the better Way to remove 'em in Autumn, because it will save a great Expence in watering them, if the Spring should prove dry. In this Nursery they may remain four or five Years, during which Time the Ground should be dug every Spring, and constantly kept clear from Weeds; and the large Side-shoots pruned off, to cause 'em to advance in Height; but the small Twigs must not be pruned off from the Stems, because these are absolutely ne-

cessary to detain the Sap, for the Augmentation of their Trunks, which are apt to shoot up too slender, when they are entirely divested of all their lateral Twigs. If the Soil in which they are planted be a fat Loam, they will make a prodigious Progress in their Growth, so that in five Years time they will be fit to transplant out where they are to remain.

These Trees were a few Years since greatly esteem'd for planting Walks and Avenues near Habitations, because in a few Years they would afford a pleasant Shade, and might be removed, when grown to a large Stature, without Hazard, so that a Person might enjoy the Pleasure of 'em in a short Time: But of late they are much less valued, on account of their Leaves decaying early in Autumn, (especially if the Soil be dry in which they are planted) so that many times they are almost destitute of Leaves by the Beginning of *September*, whereas the *Elm* continues in Beauty a full Month longer, and the Wood of the latter being much preferable to that of the former, has introduced these Trees instead of *Limes* in most of the modern Plantations.

The Timber of the *Lime-tree* is used by the *Carvers*, it being a soft light Wood; as also by Architects for framing the Models of their Buildings; the *Turners* do also use it for making light Bowls, Dishes, &c. but it is too soft for any strong Purposes.

These Trees will continue sound a great Number of Years, and if planted in a good loamy Soil, will grow to a considerable Bulk: I have measur'd one of these Trees which was near ten Yards in Girth two Feet above the Ground, and was then

then in a very thriving Condition; and Sir *Thomas Brown* mentions one of these Trees which grew in *Norfolk*, that was sixteen Yards in Circuit a Foot and half above-ground, in Height thirty Yards, and in the least Part of the Trunk it was eight Yards and an half.

TINUS: *Laurus Tinus, vulgô.*

The Characters are;

The Flowers grow in Clusters, and consist of one Leaf, which is divided into five Parts toward the Top; these are succeeded by small Fruit, shap'd somewhat like an Olive, but are umbilicated, each containing one Pear-shap'd Seed.

The Species are;

1. **TINUS;** prior. *Clus. Hist.* The Bastard shining-leav'd *Laurus Tinus, vulgô.*

2. **TINUS;** II. *Clus. Hist.* The rough-leav'd *Laurus Tinus, vulgô.*

3. **TINUS;** III. *Clus. Hist.* The small-leav'd *Laurus Tinus, vulgô.*

4. **TINUS;** prior *Clusii, folio atro-viridi splendente.* The shining-leav'd *Laurus Tinus, vulgô.*

5. **TINUS;** prior *Clusii, foliis ex albo variegatis.* The strip'd shining-leav'd *Laurus Tinus.*

6. **TINUS;** II. *Clusii, foliis ex luteo variegatis.* The strip'd rough-leav'd *Laurus Tinus.*

These Plants are greatly propagated in the Gardens near *London* for their Beauty, the Leaves always remaining green, and their Flowers are produced in great Plenty in the Winter Season, when few other Shrubs do flower.

These Plants were a few Years since preserved in Pots and Tubs, and placed in the Green-house in Winter, with *Oranges, Myrtles*, and other exotick Trees; but of late Years they have been planted in the open Ground, where they resist the Cold of our ordinary Winters very well,

and are rarely injured, except in very severe Frosts, and then they are seldom destroy'd, though their Heads may be kill'd (as was the Case with many of these Trees in the Year 1728.) yet those which were left undisturb'd, shot out fresh again the following Summer, and have since made good Plants; which should caution People from rooting out Plants too soon, when they may seem to be kill'd by Frost.

These Plants may be propagated by laying down their tender Shoots in the Spring, which if kept clear from Weeds, and duly water'd in dry Weather, will take Root by the succeeding Spring, when they should be taken off and transplanted into a mellow, loamy Soil, (but not too wet) at three Feet distance Row from Row, and eighteen Inches asunder in the Rows, observing to lay some Mulch upon the Surface of the Ground about their Roots, and in dry Weather to refresh 'em with Water until they have taken Root.

There should be also some strait Stakes fix'd down by the Side of each Plant, to which they should be fasten'd, in order to render their Stems strait, otherwise they will be crooked and unlighty. But it is not proper to have these Plants more than two Feet high in clear Stems, because when their Heads are advanced above Sight, the Beauty of the Plants are lost, and they are in greater Danger of being destroy'd in bad Weather: Therefore, when their Stems are two Feet high, their upright Shoots should be stopp'd, in order to force out lateral Branches, which may be so prun'd in the growing Season, as to form 'em into regular Heads; but this should not be done with Sheers (as is the common Practice, whereby

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whereby their Leaves are cut, and render'd very unsightly), but rather skilfully pruned with a Knife, allowing their Branches a proportionable Distance to the Breadth of their Leaves, which will be close enough to render them beautiful, and at the same Time will encourage their Flowering : For when they are continually clipp'd, their Branches are very weak, and do often decay in the Middle, and their Flowers are never so large, nor produc'd in so great Plenty as when they have a greater Distance allow'd to their Shoots.

In this Nursery the Plants may remain four or five Years, during which time they should be carefully clear'd from Weeds, and the Ground dug every Spring ; in doing of which their Roots should be carefully cut round, to cause 'em to produce more Fibres, whereby they may be removed with greater Safety, because the Earth will be the better supported by their Roots. The best Time to transplant them is about the Beginning of *April*, as hath been directed for most Sorts of *Evergreens*, that being the Season they begin to shoot.

These Shrubs are very ornamental, when planted in the lower Part of Clumps, and other Plantations of *Evergreens*, if they are mix'd with other Plants of the same Growth ; and in these Plantations they will not be so liable to suffer by Frost, because their Stems will be defended by the neighbouring Plants.

There are some who make Hedges of these Plants, but they are by no means proper for that Purpose, because their Leaves are large, which occasions their Branches to be produced at a farther Distance, and these when cut do

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appear very unsightly ; besides, by the frequent cutting of them, it prevents their flowering, so that the greatest Beauty of the Plants is lost ; for they should never be pruned after the Beginning of *May*, unless some very luxuriant Shoots are produced, which grow greatly out of Order ; these may be shorten'd, or entirely displaced, according as the Plants may require ; and this one Pruning every Spring will be sufficient to keep 'em constantly in Order, without injuring their Flowering, which should always be avoided.

TITHYMALOIDES ; Bastard Spurge.

The Characters are ;

The Flower consists of one Leaf, and is in Shape somewhat like a Slipper ; whose Pointal afterwards becomes a tricapsular Fruit like that of Spurge.

The Species are ;

1. **TITHYMALOIDES ;** *frutescens, folio Myrti amplissimo.* Tourn. The American, shrubby, Laurel-leav'd Spurge, *vulgo*.

2. **TITHYMALOIDES ;** *frutescens, foliis nerii.* Plum. Shrubby Bastard Spurge with an Oleander Leaf.

These Plants are very common in the warm Parts of *America*, where the first is known by the Name of *Poison-weed*, under which Appellation I received it from *Barbados* ; this Sort is now pretty common in the Gardens of those who are curious in preserving tender exotick Plants, but the second Sort is yet very rare in the *English* Gardens.

They are both propagated by Cuttings, which may be taken from the Plants during any of the Summer Months, and after having lain in a dry Place for a Fortnight or three Weeks, until the wounded

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Part be healed over, they should be planted into small Pots, fill'd with light, sandy Earth, mix'd with Lime-rubbish, and then plunged into a Hot-bed of Tanners-bark, observing now and then to refresh them gently with Moisture; but they should never receive much Wet, which will rot them.

After they have taken Root they may have a greater Share of Air, by raising the Glasses, but they must never be intirely expos'd to the open Air: In this Bed they may remain until the Beginning of October, when they must be remov'd into the Stove, and placed with the Melon and Torch-Thistle, in a warm dry Situation, and during the Winter Season they should have very little Water, which if given in Plenty, seldom fails to rot 'em. In the Spring these Plants should be again placed into a Bark-bed, which will greatly promote their Growth, and will cause 'em to produce Flowers, which they seldom do when kept dry upon Shelves in the Stove, nor will they make any considerable Progress in such a Situation.

These Plants are preserved for their odd Appearance amongst other succulent Plants, their Leaves being very large, thick, and full of a milky acrid Juice.

TITHYMALUS; Spurge.

The Characters are;

The Flower consists of one Leaf, which is of the globous, Bell-shape, cut into several Moon-shap'd Segments, and encompass'd by two little Leaves, which seem to perform the Office of a Flower-cup; the Pointal, which is for the most part triangular, rises from the Bottom of the Flower, and afterwards becomes a Fruit of the same Shape, divided into three seminal Cells, in each of which is con-

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tain'd one oblong Seed. To these Notes should be added, It has a milky Juice abounding in every Part of the Plant.

The Species are;

1. **TITHYMALUS; latifolius, cataputia dictus.** H. L. Broad-leav'd Spurge, called Cataputia.

2. **TITHYMALUS; characias, amygdaloides.** C. B. P. Wood Spurge with Almond-like Leaves.

3. **TITHYMALUS; characias, amygdaloides, foliis eleganter variegatis.** Flor. Bat. Wood Spurge with beautiful strip'd Leaves.

4. **TITHYMALUS; maritimus.** C. B. P. Sea Spurge.

5. **TITHYMALUS; myrsinites, latifolius.** C. B. P. Broad Myrtle-leav'd Spurge.

6. **TITHYMALUS; palustris, fruticosus.** C. B. P. Shrubby Marsh Spurge, commonly called, the Greater Esula of the Shops.

7. **TITHYMALUS; foliis pini, fortè Dioscoridis pityusa.** C. B. P. Pine-leav'd Spurge, called the Lesser Esula of the Shops.

8. **TITHYMALUS; Indicus frutescens.** Raii Hist. Indian shrubby Spurge.

9. **TITHYMALUS; Indicus, viminalis, penitus aphyllus.** Boerh. Ind. Indian Spurge with slender stragling Branches without Leaves.

10. **TITHYMALUS; arboreus.** Alpin. Tree Spurge with Myrtle Leaves.

11. **TITHYMALUS; Creticus, characias, angustifolius, villosus & incanus.** T. Cor. Woody Spurge of Candia, with narrow, hairy, and hoary Leaves.

There is a great Number of Species of less Note, which are seldom cultivated in Gardens, so I shall not enumerate them here, those already mention'd being the most valuable Sorts.

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The first is a biennial Plant, which will scatter its Seeds, and the Plants will come up without any Care, which will flower and seed the following Summer, after which the Plants will die; these Plants come up much better when the Seeds fall of themselves, than if sown with great Care, nor will they bear removing, unless it be done while they are young; because they generally send forth a Tap-root, which is often broken by transplanting, and thereby the Plant destroy'd. This is order'd by the *College of Physicians* to be us'd in Medicine, under the Title of *Catabutia minor*, for which Reason it is preserv'd in some Gardens, though there is no great Beauty in the Plant.

The second Sort is found wild in Woods and other shady Places in divers Parts of *England*, but is worthy of a Place in small Wilderness Quarters, or in other shady Plantations, where it will thrive very well, and in the Spring will produce great Tufts of Flowers, which although not very beautiful, yet are of a singular Figure and Colour, and will add to the Variety of the Place. These Plants may be taken out of the Woods in Autumn, and transplanted into the Places where they are design'd, in which, if they are once establish'd, they will sow their Seeds, and thereby be continued; but if they are not placed under the Shelter and Shadow of Trees, they will not thrive so well.

The third Sort is a Variety of the second; the Leaves of this Kind are beautifully strip'd, so as to appear of three Colours: This may be propagated by Cuttings, which should be planted in Pots, filled with light sandy Earth, and placed in the Shade until they have taken Root, after which they may be

placed amongst other curious Plants, where they may be screen'd from the Violence of the Sun in Summer, and in Winter they must be shelter'd under a Frame from hard Frost, which will destroy them, but they must have the free Air in mild Weather, and not too much Wet in Winter.

The fourth Sort is found wild upon the Sea Coasts in several Places in *England*, from whence it has been transplanted into several Gardens: This may be propagated by sowing the Seeds, or by Cuttings, which must be planted in the Spring, upon a gravelly poor Soil, in which this Plant will endure the Cold of our ordinary Winters very well, but in very severe Frosts it is often destroy'd. This is preserv'd in some Gardens, more for the Sake of its Variety than Beauty.

The fifth Sort may also be propagated either by sowing its Seeds or planting Cuttings, in the same manner as the former, but must have a dry Soil, and a warm Situation, otherwise the Cold will destroy it in Winter. This Plant trails upon the Ground, so should be planted at a Distance from other Plants, because if it be overhung by 'em it will not thrive, and the Branches of this will many times extend themselves two Feet from the Root, so that if it has not Room, they will rot and die away.

The sixth Sort grows wild in marshy Places in *France*, *Italy*, and *Germany*, but in *England* it is preserv'd in some curious Botanick Gardens, it being an officinal Plant. This may be propagated by parting the Roots, and planting Cuttings in the Spring, which must be done in a light Soil and an open Situation, where it will grow four or five

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five Feet high, and become very shrubby; so that the Plants must be allowed at least two Feet Room to grow, otherwise they will overbear each other, or whatever Plants stand near 'em. There is not much Beauty in this Sort, but as it is a medicinal Plant, it should have a Place in Physick Gardens.

The seventh Sort is a very hardy Plant, and propagates itself by its creeping Roots, so that if it be not confined in Pots, it will spread over the Ground where-ever it is planted, so as not to be easily kept within Bounds. This being a medicinal Plant, should also have a Place in Physick Gardens, but there is not much Beauty in it to recommend it to the Curious.

The eighth, ninth and tenth Sorts are tender Plants, which come from warm Countries; and in *England* are preserved with great Care in Stoves, amongst other curious succulent Plants. These are propagated by Cuttings, which should be cut from the old Plants at a Joint, and laid in a dry Part of the Stove for a Fortnight, that the wounded Part may heal over; then they should be planted in small Pots, filled with light sandy Earth, mix'd with Lime-rubbish, and plunged into a Hot-bed of Tanners-bark, where they should remain until they have taken Root, after which they should be inured to the Air by Degrees, and then be removed into the Stove, where they must constantly be kept, for they are too tender to be expos'd abroad in the Heat of Summer; therefore they should be placed near the Glasses of the Stove in Summer, where they may have Air in very hot Weather, but they must not have much Wet, being very full of Moisture, and subject to rot if over watered.

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In Winter they must be set in a warm Part of the Stove, and should have very little Wet during that Season: With this Management these Plants will thrive and grow very large, but they seldom produce Flowers in this Country.

The eleventh Sort was found by Monsieur *Tournefort* in the *Levant*, and by him brought into *Europe* by the Name here given to it, though many curious Botanists are not satisfied how it differs from the *Tithymalus characias rubens peregrinus* of *Caspar Bauhinus*. This has a great deal of the Appearance of our *Wood Spurge*, but the Stalks are redder, and the Flowers are much fairer: It may be propagated by Cuttings, which should be planted in Pots, filled with light sandy Earth, and in Winter must be shelter'd, otherwise it is apt to perish with severe Cold. In *March* it flowers, at which time it makes a beautiful Appearance, and is worthy of a Place in every good Garden.

TOAD-FLAX; *vide* Linaria.

TOBACCO; *vide* Nicotiana.

TOXICODENDRON; Poison-tree; *vulgô*.

The Characters are;

The Flower consists of five Leaves, which are placed orbicularly, and expand in Form of a Rose; out of whose Flower cup rises the Pointal, which afterwards becomes a roundish, dry, and for the most part, furrowed Fruit, in which is contain'd one compress'd Seed.

The Species are;

1. TOXICODENDRON; *triphyllum, glabrum*. Tourn. Three-leav'd smooth Poison-tree.

2. TOXICODENDRON; *triphyllum, folio sinuato pubescente*. Tourn. Three-leav'd Poison-tree with a sinuated hairy Leaf.

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3. *TOXICODENDRON*; *Carolinianum*, *foliis pinnatis, floribus minimis herbaceis*. Carolina Poison Ash; *vulgô*.

The two first *Species* were brought from *Virginia*, many Years since, where they grow in great Plenty, as it is probable they do in most other Northern Parts of *America*. The first Sort seldom advances in Height, but the Branches trail upon the Ground, and send forth Roots, by which they propagate in great Plenty.

The second Sort will grow upright, and make a Shrub about four or five Feet high, but rarely exceeds that in this Country. This may be propagated by Layers, and is equally as hardy as the former.

The third Sort was rais'd from Seeds, which were sent from *Carolina* by Mr. *Catesby*. This is somewhat tenderer than either of the former, but will endure the Cold of our ordinary Winters very well, especially if it be planted near the Shelter of other Trees.

These Plants are preserved by the Curious in Botany, for the Sake of Variety, but as there is little Beauty in them, so they are not much cultivated in *England*. The Wood of these Trees, when burnt, emits a noxious Fume, which will suffocate Animals when they are shut up in a Room where it is burnt: An Instance of this is mention'd in the *Philosophical Transactions* by Dr. *William Sherard*, which was communicated to him in a Letter from *New England* by Mr. *Moore*, in which he mentions some People who had cut some of this Wood for Fuel, which they were burning, and in a short time they lost the Use of their Limbs and became stupid; so that if a Neighbour had not accidentally o-

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pen'd the Door, and saw them in that Condition, it is generally believ'd they would soon have perish'd. This should caution People from making use of this Wood.

TRAGACANTHA; Goats-thorn.

The *Characters* are;

It hath a papilionaceous Flower, out of whose Empalement arises the Pointal, which afterwards becomes a bicapsular Pod, fill'd with Kidney-shap'd Seeds. To these Notes must be added, The Leaves grow by Pairs on a middle Rib, which always ends in a Thorn.

The *Species* are;

1. *TRAGACANTHA*; *Massiliensis*. *J. B.* Goats-Thorn of *Marseilles*.

2. *TRAGACANTHA*; *Cretica, incana, flore parvo, lineis purpureis striato. T. Cor.* Hoary Goats-thorn of *Crete*, with a small Flower strip'd with purple Lines.

3. *TRAGACANTHA*; *humilis Balearica, foliis parvis vix incanis, flore albo. Salvad.* Low Balearic Goats-thorn, with small Leaves and a white Flower.

There are many other *Species* of this Plant which grow wild in the Islands of the *Archipelago*; but those here mention'd are all the Sorts I have yet seen cultivated in the *English* Gardens.

These Plants may be propagated either from Seeds or by Cuttings, but as they rarely produce Seeds in this Country, so the latter Method is only used here. The best Time for this Work is in *April*, just as the Plants begin to shoot; at which Time the tender Branches of the Plants should be taken off, and their lower Parts divested of the decay'd Leaves; then they should be planted on a very moderate Hot-bed, which should be cover'd with Mats, to screen them from the great Heat of the Sun by Day, and the

the Cold by Night: These Cuttings should be frequently water'd until they have taken Root; after which they may be expos'd to the open Air, observing always to keep them clear from Weeds, and in very dry Weather they must be refresh'd with Water.

On this Bed they may remain until the following Spring, where, if the Winter should be very severe, they may be cover'd with Mats, as before, and in *April* they may be transplanted out either into Pots fill'd with sandy, light Earth, or into warm Borders, where, if the Soil be dry, gravelly, and poor, they will endure the severest Cold of our Climate; but if they are planted in a very rich Soil, they often decay in Winter.

From the second Sort Monsieur *Tournefort* says, the Gum *Adragant* or *Dragon* is produc'd in *Crete*; of which he gives the following Relation in his Voyage to the *Levant*:

" We had (*says he*) the Satisfaction
 " of fully observing the Gum *A-*
 " *dragant* on Mount *Ida*. I can-
 " not understand how *Bellonius*
 " comes to assert so positively, that
 " there is no such thing in *Candia*:
 " Sure he had not read the first
 " Chapter of the ninth Book of
 " *Theophrastus's* History of Plants.
 " The little bald *Hillocks* about the
 " *Sheepfold* produce much of the
 " *Tragacantha*, and that too a ve-
 " ry good Sort. *Bellonius* and *Prof-*
 " *per Alpinus* were doubtless ac-
 " quainted with it; tho' it is hard-
 " ly possible, from their Descrip-
 " tions, to distinguish it from the
 " other Kinds they make mention
 " of. This Shrub spontaneously
 " yields the Gum *Adragant* to-
 " wards the End of *June*, and in
 " the following Months; at which
 " time, the nutritious Juice of this

" Plant, thicken'd by the Heat,
 " bursts open most of the Vessels
 " wherein it is contain'd. It is
 " not only gather'd in the Heart
 " of the Trunk and Branches, but
 " also in the Interspaces of the
 " Fibres, which are spread in the
 " Figure of a Circle like Rays of
 " the Sun. This Juice is coagu-
 " lated into small Threads, which
 " passing through the Bark, issue
 " out by little and little, according
 " as they are protruded by the
 " fresh Supplies of Juice arising
 " from the Roots. This Substance
 " being expos'd to the Air, grows
 " hard, and is form'd either into
 " Lumps, or slender Pieces, curl'd
 " and winding in the Nature of
 " Worms, more or less long, ac-
 " cording as Matter offers. It
 " seems as if the Contraction of
 " the Fibres of this Plant contri-
 " butes to the expressing of the
 " Gum. These delicate Fibres, as
 " fine as Flax, being uncover'd,
 " and trodden by the Feet of the
 " Shepherds and Horses, are by
 " the Heat shrivell'd up, and faci-
 " litate the Emanation of the ex-
 " travasated Juices."

But notwithstanding what *Tournefort* has said concerning the Gum *Adragant* being produc'd from that particular Species, many Authors are of Opinion, that it is taken from several other Species, but particularly that of *Marseilles*, from whence that Gum is often brought into England.

TRAGOPOGON; Goats-beard.

The Characters are;

It is a Plant with a semiflosculous Flower, consisting of many half Florets; these, with the Embryo's are included in one common many-leav'd Flower-cup, which is not scaly as in Scorzonera, but the Segments are stretch'd out above the Florets; the Embryo's

Embryo's afterwards become oblong Seeds inclos'd in Covers or Coats, and have a thick Down like a Beard adhering to them.

The Species are ;

1. TRAGOPOGON ; *pratense, luteum, majus*. C. B. P. Greater Meadow Goats-beard, with a yellow Flower, commonly call'd, Go-to-Bed-at-Noon.

2. TRAGOPOGON ; *purpureo-ceruleum, porri folio quod Artifi; vulgò*. C. B. P. Goats-beard, with a Leaf like Leeks, and a purple blue Flower, commonly call'd, Salsafy or Salsafy.

3. TRAGOPOGON ; *alter, gramineo folio, suave-rubente flore*. Col. Another Goats-beard, with a grassy Leaf, and soft red Flowers.

There are several other Species of this Plant, which are preserv'd in some curious Botanick Gardens for the Sake of Variety; but as they are not cultivated for Use, so I shall omit enumerating them in this Place.

The first Sort here mention'd grows wild in moist Meadows in divers Parts of England; and in May, when the Stems begin to advance, they are by many People gather'd to boil, and are by some preferr'd to *Asparagus*.

The second Sort was formerly more in Esteem than at present: This was brought from *Italy*, and cultivated in Gardens for Kitchen Use, the Roots being by some People greatly valued; but of late there is but little cultivated for the Markets, tho' several Gentlemen preserve it in Gardens to supply their Tables.

The third Sort is by some preserv'd for the Variety of its Flowers.

These Plants are propagated from Seeds, which should be sown

in the Spring upon an open Spot of Ground, in Rows about nine or ten Inches distant; and when the Plants are come up, they should be hoed out, leaving them about six Inches asunder in the Rows: the Weeds should also be carefully hoed down as they are produc'd, otherwise they will soon over-bear the Plants, and spoil them. This is the only Culture they require; and if the Soil be light, and not too dry, they will make large Plants before Winter; at which time the *Salsafy*, whose Roots are the most valuable Part, will be fit for Use, and may be taken up any time after their Leaves are decay'd; but when they begin to shoot again, they will be sticky, and not fit for Use.

The common yellow Sort, whose Shoots are preferr'd, will be fit for Use in *April* or *May*, according to the Forwardness of the Season: The best time to cut them is, when their Stems are about four Inches long; for if they stand too long, they are never so tender as those which are cut while young.

Some People in cultivating these Plants, sow their Seeds in Beds pretty close, and when the Plants come up, they transplant them out in Rows at the before-mention'd Distance; but as they do always form a Tap-root, which abounds with a milky Juice, so when the extream Part of their Roots is broken by transplanting, they do seldom thrive well afterward; therefore it is by far the better Way to make shallow Drills in the Ground, and scatter the Seeds therein, as before directed, whereby the Rows will be at a due Distance, and there will be nothing more to do than to hoe out the Plants when they are too thick in the Rows, which will

will be much less Trouble than the other Method of transplanting, and the Plants will be much larger and fairer.

TRANSPORTATION of PLANTS: In sending *Plants* from one Country to another, great Regard should be had to the proper Season for doing it: For Example, if a Parcel of *Plants* are to be sent from a hot Country to a cold one, they should be sent in the Spring of the Year, that as they come towards the colder Parts, the Season may be advancing, and hereby, if they have suffer'd a little in their Passage, there will be time to recover them before Winter; whereas those which arrive in Autumn are often lost in Winter, because they have not time to recover and get Root before the Cold comes on.

On the contrary, those *Plants* which are sent from a cold Country to a hot one, should always be sent in Winter, that they may arrive time enough to be rooted before the great Heats come on, otherwise they will soon perish.

The best Way to pack up *Plants* for a Voyage (if they are such as will not bear to be kept out of the Ground) is, to have some handy Boxes with Handles to them, for the more easily removing them in bad Weather: These should have Holes bored in their Bottoms to let out the Moisture, otherwise it will rot the Roots of the *Plants*. Over each of these Holes should be laid a flat Tile or Oyster-shell, to prevent the Earth from stopping them; then they should be fill'd up with Earth, into which the *Plants* should be set as close as possible to each other, in order to save Room (which is absolutely necessary, otherwise they will be very trouble-

some in the Ship;) and as the only thing intended is, to preserve them alive, and not to make any Progress while on their Passage, so a small Box will contain many *Plants*, if rightly planted. The *Plants* should also be plac'd in the Box a Fortnight or three Weeks before they are put on Board the Ship, that they may be a little settled and rooted; and during the Time they are on Board, they should remain, if possible, on the Deck, that they may have Air; but in bad Weather they should be cover'd with a Tar-pawlin, to guard them against the Salt Water, which will destroy them if it comes at 'em in any Quantity.

The Water these *Plants* should have, while on Board, must be proportion'd to the Climate where they come from, and to which they are going: If they come from a hot Country to a cold one, then they should have very little Moisture, after they have passed the Heats; but if they are carry'd from a cold Country to a hot one, they must have a greater Share of Moisture when they come into a warmer Climate, and should be shaded in the Day from the violent Heat of the Sun, to which, if they are too much expos'd, it will dry them up and destroy them.

But if the *Plants* to be sent from one Country to another, are such as will live out of the Ground a considerable time, as all those which are full of Juice will do; as the *Sedums*, *Ficoïdes*, *Euphorbiums*, *Cereus's*, &c. then they require no other Care but to pack them up in a close Box, wrapping them up well with *Moss*, observing to place them so closely that they may not be tumbled about, which will bruise them, and that those *Plants* which

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have Spines may not wound any of the others. The Box also should be plac'd where they may receive no Moisture, and where Rats cannot come to them, otherwise they are in Danger of being eaten by those Vermin.

If these *Plants* are thus carefully pack'd up, they will do well, tho' they should be two, three, or some Sorts, if they are four or five Months on their Passage, and will be less liable to suffer than if planted in Earth, because the Sailors generally kill these *Plants* by over-watering them.

There are also several Sorts of Trees which may be pack'd up in Chests with Moss about them, which will bear to be kept out of the Ground two or three Months, provided it be at a Season when they do not grow; as may be seen by the *Orange-Trees*, *Jasmines*, *Capers*, *Olive* and *Pomegranate-Trees*, which are annually brought from *Italy*, and if skilfully managed, very few of them miscarry, notwithstanding they are many times kept three or four Months out of the Ground.

In sending Seeds from one Country to another, the great Care to be taken is, to secure them from Vermin, and preserve them dry, otherwise they mould and decay. The Method Mr. *Catesby* always observ'd was, to put up his Seeds dry into Papers, and then put them into a dry Gourd-shell, and seal them up; in which Way he sent several large Parcels of Seeds from *Carolina* to *England*, which never miscarry'd. There are some Persons who have directed to put them into Glasses, and to seal them closely down, to keep out the external Air; but from several Experiments of this kind which I have

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made, I find Seeds thus closely put up will not grow, if they remain stopp'd up any considerable time, all Seeds requiring some Share of Air to preserve their vegetating Quality: So that where a Person has no other Conveniency, they may be put up in a Bag, and hung up in a dry Part of the Ship, or put into a Trunk, where they may be safe from Vermin; in which Places they will keep very well.

N. B. It is the safest Way to bring all Sorts of Seeds in their Pods or Husks in which they grew, provided they are put up dry, because their own Covering will afford them some Nourishment if the Seeds are not separated from the *Placenta*.

TRIFOLIUM; Trefoil.

The Characters are;

It hath a papilionaceous Flower, or resembles a papilionaceous Flower, for it consists of the Standard; the Wings and the Keel coming out of the Empalement, together with the Pointal, cover'd with its fringed Sheath; it becomes a Capsule, hidden in the Empalement, and full of Seeds, which are for the most part shap'd like a Kidney, adhering close to the Capsule when ripe. Some of this Genus have Flowers consisting of one Leaf, resembling a papilionaceous Flower, out of whose Empalement arises the Pointal, which afterward becomes a membranaceous Capsule hidden in the Empalement, and fill'd with Kidney-shap'd Seeds. To these Notes must be added, Leaves growing by Threes, seldom by Fours, or Fives, on a common Footstalk.

The Species are;

1. TRIFOLIUM; *purpureum, majus sativum, pratense simile*. Raii Syn. Greater purple manured Trefoil, commonly call'd, Clover.

2. TRIFOLIUM; *pratense, purpureum*

reum vulgare. Mor. Hist. Common Meadow Trefoil, with a purple Flower, commonly call'd, Honey-suckle Trefoil.

3. TRIFOLIUM; *pratense album*. C. B. P. White Meadow Trefoil.

4. TRIFOLIUM; *arvense, humile, spicatum, sive Lagopus*. C. B. P. Hare's-foot Trefoil.

5. TRIFOLIUM; *fragiferum*. Ger. Emac. Strawberry-Trefoil.

6. TRIFOLIUM; *pratense luteum, capitulo. Lupuli, vel agrarium*. C. B. P. Hop-Trefoil.

7. TRIFOLIUM; *bitumen redolens*. C. B. P. Trefoil, smelling of Bitumen.

8. TRIFOLIUM; *bitumen redolens, angustifolium*. Boerh. Ind. Narrow-leav'd Trefoil, smelling of Bitumen.

9. TRIFOLIUM; *Africanum, fruticans, flore purpurascens*. H. Amst. African shrubby Trefoil, with a purplish Flower.

The first of these Plants is greatly cultivated in *England* for feeding of Cattle, and is esteem'd very profitable, because the great Quantity of Cattle which this Grass will maintain, does very much enrich all clayey Lands, and prepare them for Corn in two or three Years, which is the Length of Time which this Crop will continue good.

In the Choice of this Seed, that which is of a bright yellowish Colour, a little inclining to Brown, should be preferr'd; but that which is Black, should be rejected as good for little.

Ten or twelve Pounds of this Seed will be sufficient for an Acre of Ground; for if the Plants do not come up pretty thick, it will not be worth standing. The Land in which this Seed is sown, should be well ploughed, and harrowed very fine, otherwise the Seeds will

be buried too deep, and thereby lost.

The best time to sow it is about the Beginning of *August*, at which time the Autumnal Rains will bring up the Plants in a short time; whereas when the Seeds are sown in the Spring, if it be done very early, they are many times burst with Wet and Cold; and if it be done late, they are in Danger of miscarrying from Drought: Whereas in Autumn, when the Ground has been warm'd by the Summer's Heat, the Rains then falling, do greatly promote the Vegetation of Seeds and Plants.

This Seed should be harrow'd in with Bushes, for if it be done with a common Harrow, they will be bury'd too deep.

Most People have recommended the sowing of this Seed with several Sorts of Corn; but if it be sown at the Season before directed, it will be much better, if sown alone; for the Corn prevents the Growth of the Plants until it is reaped and taken off the Ground; so that one whole Season is lost, and many times, if there be a great Crop of Corn upon the Ground, it often spoils the *Clover*, so that it is hardly worth standing; whereas in the Way before directed, the Plants will have good Root before Winter, and in the Spring will come on much faster than that which was sown the Spring before under Corn.

About the Middle of *May* this Grass will be fit to cut, when there should be great Care taken in mixing it, for it will require a great deal more Labour and Time to dry than common Grass, and will shrink into less Compass; but if it be not too rank, it will make extraordi-

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nary rich Food for Cattle. The Time for cutting it is when it begins to flower, for if it stands much longer, the lower Part of the Stems will begin to dry, whereby it will make a less Quantity of Hay, and that not so well flavour'd.

Some People cut three Crops in one Year of this Grass, but the best Way is to cut but one in the Spring, and feed it the remaining Part of the Year, whereby the Land will be enriched, and the Plants will grow much stronger.

One Acre of this Grass will feed as many Cattle as four or five Acres of common Grass: But great Care should be taken of the Cattle when they are first put into it, lest it burst them. To prevent which, some turn them in for a few Hours only at first, and so stint them as to Quantity, and this by degrees, letting them at first be only one Hour in the Middle of the Day, when there is no Moisture upon the Grass, and so every Day suffer them to remain a longer time, until they are fully season'd to it: But great Care should be had never to turn them into this Food in wet Weather; or if they have been for some time accustomed to this Food, it will be proper to turn them out at Night in wet Weather, and let them have Hay, which will prevent the ill Consequences of this Food: But there are some who give Straw to their Cattle while they are feeding upon this Grass, to prevent the ill Effects of it; which must not be given them in the Field, because they will not eat it where there is Plenty of better Food. There are others who sow Rye Grass amongst their *Clover*, which they let grow together, in order to prevent the

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ill Consequences of the Cattle feeding wholly on *Clover*: But this is not a commendable Way, because the Rye Grass will greatly injure the *Clover* in its Growth.

Where the Seeds are design'd to be sav'd, the first Crop in the Spring should be permitted to stand until the Seeds are ripe, which may be known by the Stalks and Heads changing to a brown Colour; then it should be cut in a dry Time: And when it is well dry'd, it may be hous'd until Winter, when the Seeds should be thresh'd out; but if the Seeds are wanted for immediate sowing, it may be thresh'd out before it be hous'd or stack'd, but then it must be well dry'd, otherwise the Seeds will not quit their Husks.

It has been a great Complaint amongst the Farmers, that they could not thresh out these Seeds without great Labour and Difficulty, which I take to be chiefly owing to their cutting the Spring Crop when it begins to flower and to leave the second Crop for Seed, which ripens so late in Autumn, that there is not Heat enough to dry the Husks sufficiently, whereby they are tough, and the Seeds render'd difficult to get out, which may be intirely remedied by the leaving of the first Crop for Seed, as hath been directed.

When Cattle are fed with this Hay, the best Way is to put it in Racks, otherwise they will tread a great Quantity of it down with their Feet. This Feed is much better for most other Cattle than Milch Cows, so that these should rarely have any of it, lest it prove hurtful to them; tho' when it is dry, it is not near so injurious to any sort of Cattle as when green.

The second and third Sorts grow
wild

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wild in Meadows amongst the Grass, where their Roots will abide many Years, and are cut with the Grass, and dry'd for Food: But these are rarely cultivated in *England*, because they are Plants of much smaller Growth than the *Clover*.

The fourth Sort is an annual or biennial Plant, which perishes as soon as the Seeds are ripe. This grows wild in divers Parts of *England* amongst Corn, or upon other arable Land, and is seldom cultivated unless in Botanick Gardens, it being a medicinal Plant.

The fifth and sixth Sorts do also grow wild in *England*, but are often preserv'd in *Botanick* Gardens for Variety. The fifth Sort produces Heads very like a *Strawberry*, from whence it had its Name; and the sixth Sort has Heads very like *Hops*, for which Diversity they are sometimes cultivated in Gardens, but they are not apply'd to any Use.

The seventh, eighth, and ninth Sorts are also preserv'd in Gardens for Variety, where they are planted in Pots, and shelter'd in Winter amongst other Exotick Plants; but the seventh and eighth Sorts will endure the Cold of our ordinary Winters in the open Air, provided they are planted on a dry Soil, and in a warm Situation; but the ninth Sort requires to be shelter'd from severe Frost, but should have as much free Air as possible in mild Weather.

These Plants may be propagated either from Seeds, or by planting Cuttings of them in the Spring, upon a Bed of rich, light Earth, observing to water and shade them until they have taken Root; after which they must be carefully clear'd from Weeds during the Summer Season, and in *August* some of the

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Plants should be taken up and planted in Pots fill'd with light, sandy Earth, which in Winter should be plac'd under a common Hot-bed Frame, where they may have Air in mild Weather; but in frosty Weather may be shelter'd with Glasses, &c. If they are propagated from Seeds, these should be sown towards the latter End of *March* upon a Bed of light Earth, and when the Plants are come up, they must be carefully clear'd from Weeds, that they may not be overborn thereby; and when they are about four Inches high, they should be planted either into Pots, or the Borders where they are to remain, because if they are suffer'd to grow very rank before they are remov'd, they do not bear transplanting so well. These Plants are preserv'd in Gardens more for the Sake of Variety than any real Beauty, especially the two first, which smell so strong of *Bitumen*, when bruised, as scarcely to be born without Unpleasantness.

TRIPOLIUM; *vide* Aster.

TRITICUM; Wheat.

The Characters are;

It hath an apetalous Flower, which is dispos'd into Spikes; each single Flower consists of many Stamina (or Threads) which are included in a squamous Flower-cup, which hath Awns; the Pointal also rises in the Center, which afterwards becomes an oblong Seed, which is convex on one Side, but hath a Furrow on the other; is farinaceous, and enclos'd by a Coat which was before the Flower-cup: These are produc'd singly, and are collected in a close Spike, being affix'd to an indented Axis.

The Species are;

1. TRITICUM; *hybernum, aristis carens*. C. B. P. White or red Wheat without Awns.

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2. *TRITICUM*; *spica & granis rubentibus*. *Raii Syn.* Red Wheat, in some Places call'd, Kentish Wheat.

3. *TRITICUM*; *spica & granis albis*. *Raii Syn.* White Wheat.

4. *TRITICUM*; *aristis circumvallatum, granis & spica rubentibus, glumis laevibus & splendentibus*. *Raii Syn.* Red-ear'd bearded Wheat.

5. *TRITICUM*; *spica villosa quadrata longiore, aristis munitum*. *Hist. Ox.* Cone Wheat.

6. *TRITICUM*; *aristatum, spica maxima cinericea, glumis hirsutis*. *Raii Syn.* Grey Wheat, and in some Places, Duckbill Wheat and Grey Pollard.

7. *TRITICUM*; *majus, longiore grano, glumis foliaceis incluso, seu Triticum Polonia dictum*. *Hist. Ox.* Polonian Wheat.

8. *TRITICUM*; *spica multiplici*. *C. B. P.* Many-ear'd Wheat.

9. *TRITICUM*; *aestivum*. *C. B. P.* Summer Wheat.

10. *TRITICUM*; *spica hordei Londinensibus*. *Raii Syn.* Naked Barley; *vulgo*.

All these several Sorts of *Wheat* are cultivated in divers Parts of *England*, but the Manner of sowing and managing them being so well known to most Farmers, and being more proper for a Treatise of Husbandry than of Gardening, I shall omit mentioning it in this Place.

TUBEROSE; *vide Hyacinthus Tuberosus*.

TULIPA; Tulip.

The Characters are;

It hath a Lily Flower, compos'd for the most part of six Leaves, shap'd somewhat like a Pitcher; the Pointal, which arises in the Middle of the Flower, surrounded with Stamina, afterwards becomes an oblong Fruit, which opens into three Parts,

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is divided into three Cells, and full of plain Seeds, which rest upon one another in a double Row. To these Marks must be added, a coated Root, with Fibres on the lower Part.

It would be to little Purpose to enumerate the several Varieties of these Flowers, which may be seen in one good Garden, since there is no End of their Numbers; and what some People may value at a considerable Rate, others reject; and as there are annually a great Quantity of new Flowers obtain'd from Breeders, so those which are old, if they have not very good Properties to recommend them, are thrown out and despis'd: I shall therefore point out the Properties of a good Tulip, according to the Characteristicks of the best Florists of the present Age. 1. It should have a tall, strong Stem. 2. The Flower should consist of six Leaves, three within, and three without; the former ought to be larger than the latter. 3. Their Bottom should be proportion'd to their Top, and their upper Part should be rounded off, and not terminate in a Point. 4. These Leaves, when open'd, should neither turn inward nor bend outward, but rather stand erect, and the Flower should be of a middling Size, neither over large nor too small. 5. The Stripes should be small and regular, arising quite from the Bottom of the Flower; for if there are any Remains of the former self-colour'd Bottom, the Flower is in Danger of losing its Stripes again. The Chives should not be yellow, but of a brown Colour. When a Flower has all these Properties, it is esteem'd a good one.

Tulips are generally divided into three Classes, according to the Seasons of Flowering; as, 1. *Praecoces*

roces or Early Blowers, *Media's* or Middling Blowers, and *Serotine's* or Late Blowers; but there is no Occasion for making any more Distinctions than two, *viz.* Early and Late Blowers.

The Early Blowing *Tulips* are not near so fair, nor rise half so high as the Late ones, but are chiefly valu'd for appearing so early, in the Spring; some of which will flower the Beginning of *February*, if planted near a Wall, Pale, Hedge, or other Shelter; and the others do succeed them, so that they keep flowering until the general Season for these Flowers is come, which is towards the End of *April*. As these Early Blowing *Tulips* are but few, so I shall insert the Names of the principal of them; which are as follow:

1. *Duke Van Toll*, or *Winter Duke*.
2. *General Duke*.
3. *General Brancion*.
4. *Pretty Betty*.
5. *Dutchess of Brancion*.
6. *Lac Verine*.
7. *Violet Ratgans*.
8. *Violet Remow* or *Pourpre Lisse*.
9. *Palto Van Leyden*.
10. *Florifante*.
11. *Blindenburgh*.
12. *Nonfuch*.
13. *Admiral Crinki*.
14. *General Molswick*.
15. *Paragon Cleremont*.
16. *Admiral Encusen*.
17. *Morillion*.
18. *Noblest*.
19. *Early Perfect*.
20. *Superintendant*.
21. *Vice Roy*.
22. *Maria*.
23. *Aurora Van Bart*.
24. *Paragon Grebberi*.
25. *Galatea*.
26. *Marquis*.

27. *Gilden Bloemen*.
28. *Alcetus*.
29. *Feweel Van Haerlem*.
30. *Jacht Van Delft*.
31. *Goude Son*.
32. *Flamboyant*.
33. *Bruyd Renard*.
34. *Palamedes*.
35. *Apollo*.
36. *Juno*.
37. *Silver-boot*.
38. *Florida Voorhelm*.
39. *Roy d'Espagne*.
40. *Mertopolit*.
41. *Konings-kroon*.

These are the Names which have been impos'd on these Flowers by the Florists of the several Countries where they were rais'd, and by which the Roots may be obtain'd from *Flanders* and *Holland*, where the Florists are very exact in keeping up their Lists of these Flowers compleat.

The Roots of these Early Blowing *Tulips* should be planted the Beginning of *September* in a warm Border, near a Wall, Pale, or Hedge, because if they are put into an open Spot of Ground, their Buds are in Danger of suffering by Morning Frosts in the Spring. The Soil for these should be renew'd every Year, where People intend to have them fair. The best Soil for this Purpose is that which is taken from a light sandy Pasture, with the Turf rotted amongst it, and to this should be added a fourth Part of Sea-sand. This Mixture may be laid about ten Inches deep, which will be sufficient for these Roots, which need not be planted more than four or five Inches deep at most. The Off-sets should not be planted amongst the blowing Roots, but in a Border by themselves, where they may be planted pretty close

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close together, especially if they are small; but these should be taken up when their Leaves decay, in the same manner as the blowing Roots, otherwise they would rot, if the Season should prove very wet, for these are not so hardy as the late Blowers, nor do they increase half so fast as those, so that a greater Care is required to preserve the Off-sets of them.

When these *Tulips* come up in the Spring, the Earth upon the Surface of the Borders should be gently stirr'd and clear'd from Weeds, and as the Buds appear, if the Season should prove very severe, it will be of great Service to cover them with Mats; for want of which many times they are blighted, and their Flowers decay before they blow, which is often injurious to their Roots, as is also the cropping of the Flowers so soon as they are blown, because their Roots, which are form'd new every Year, are not at that time arriv'd to their full Magnitude, and are hereby depriv'd of their proper Nourishment.

If when these Flowers are blown, the Season should prove very warm, it will be proper to shade them with Mats, &c. in the Heat of the Day; as also if the Nights are frosty, they should be in like manner covered, whereby they may be preserved a long time in Beauty; but when their Flowers are decay'd, and the Seed-vessels begin to swell, they should be broken off just at the Top of the Stalks, because if they are permitted to seed, it will injure the Roots.

When the Leaves of these Flowers are decay'd (which will be before the late Blowers are out of Flower) their Roots should be taken up, and spread upon Mats in

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a shady Place to dry; after which they should be clear'd from their Filth, and put up in a dry Place, where the Vermin cannot come to them, until the Season for planting them again, being very careful to preserve every Sort separate, that you may know how to dispose of them at the Time for planting them again; because it is the better Way to plant all the Roots of each Sort together (and not to intermix them, as is commonly practis'd in most other Kinds of Flowers) for as there are few of them which blow at the same Time, so when the several Roots of one Sort are scatter'd thro' a whole Border, they make but an indifferent Appearance; whereas when twenty or thirty Roots of the same Sorts are placed together, they will all flower at the same Time, and afford a more agreeable Prospect.

There are many curious Persons, who, in order to preserve their several Kinds of *Tulips*, and other bulbous-rooted Flowers separate, have large flat Boxes made, which are divided in several Parts by small Partitions, each of which is numbered in the same manner as the Divisions of their Beds; so that when a Catalogue of their Roots is made, and the Numbers fix'd to each Sort in the Beds, there is nothing more to do when they take up their Roots, but to put every Kind into the Division mark'd with the same Number which was placed to each Sort in the Bed, which saves a great deal of Trouble in making fresh Marks every Time the Roots are taken up, and effectually answers the Purpose of preserving the Kinds separate.

The several Sorts of these early-blowing *Tulips* do rise to different Heights

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Heights in their Stems, so that scarcely any two of them do flower to an equal Height. The *Duke Van Toll* being one of the first that appears in the Spring, is generally very short stalk'd, and so the other Sorts in Proportion to their Earliness, are shorter than those which succeed them; and the late-blowing Kinds are all of them considerably longer in their Stems than any of the *Præcoces*, or Early-blowers; so that when they are confusedly mix'd together they make a very indifferent Appearance.

The late blowing *Tulips* are so numerous, that, as I before observ'd, it would be to no Purpose to attempt to make a Catalogue of them. These are generally obtain'd from Breeders, which is a Term apply'd to all such Flowers as are produc'd from Seeds, which are of one Self-colour, and have good Bottoms and Chives: These do, in Time, break into various beautiful Stripes, according to the Ground of their former Self-colour: But this must be intirely thrown off, otherwise they don't esteem a Flower well broke.

Of these Breeders there hath been a great Variety brought into *England* from *Flanders* of late Years, which is the grand Nursery for most Sorts of Bulbous-rooted Flowers; but there are some curious Persons who have lately obtain'd many valuable Breeders from Seeds sown in *England*: And doubtless were we as industrious to sow the Seeds of these Flowers, as the People of *France* and *Flanders*, we might in a few Years have as great a Variety as is to be found in any Part of *Europe*: For altho' it is six or seven Years from the sowing before the Flowers do blow, yet if after the first sowing there is every Year

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a fresh Parcel sown, when the seven Years are expir'd, there will be constantly a Succession of Roots to flower every Year, which will reward the Expectation, and keep up the Spirit of Raising: But it is the Length of Time at first, which deters most People from the Beginning of this Work.

The Manner of propagating these Flowers from Seeds, is as follows: 1. You should be careful in the Choice of the Seed, without which there can be little Success expected. The best Seed is that which is saved from Breeders which have all the good Properties before related; for the Seeds of strip'd Flowers do seldom produce any thing that is valuable.

The best Method to obtain good Seeds, is to make Choice of a Parcel of such breeding *Tulip* Roots as you would save Seeds from, and plant 'em in a separate Bed from the Breeders, in a Part of the Garden where they may be fully expos'd to the Sun, observing to plant them at least nine Inches deep; for if they are planted too shallow, their Stems are apt to decay before the Seed is perfected.

These Flowers should always be expos'd to the Weather; for if they are shaded with Mats, or any other Covering, it will prevent their perfecting the Seed. About the Middle of *July* (a little sooner or later, as the Summer is hotter or colder), the Seeds will be fit to gather, which may be known by the Dryness of their Stalks, and the Opening of the Seed-vessels, at which Time it may be cut off, and preserved in the Pods until the Season for sowing it, being careful to put it up in a dry Place, otherwise it will be subject to mould, which will render it good for little.

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Having sav'd a Parcel of good Seed, about the Beginning of *September* is the best Season for sowing it; when there should be provided a Parcel of shallow Seed-Pans or Boxes, which should have Holes in their Bottoms to let the Moisture pass off: These must be fill'd with fresh, sandy Earth, laying the Surface very even, upon which the Seeds should be sown as regularly as possible, so that they may not lie upon each other, then there should be some of the same light, sandy Earth sifted over 'em, about half an Inch thick. These Boxes or Pans should be placed where they may have the Morning-Sun 'till eleven of the Clock, in which Situation they may remain until *October*; at which time they should be remov'd into a more open Situation, where they may enjoy the Benefit of the Sun all the Day, and be shelter'd from the North Winds, where they should remain during the Winter Season; but in the Spring, when the Plants are up, they should be again removed to their first Situation, and if the Season should be dry, they must be refresh'd with Water, while the Plants remain green, but as soon as their Tops begin to decay, there must be no more given them, lest it rot their tender Bulbs; therefore the Boxes should be placed in a shady Situation during the Summer Season, but not under the Drip of Trees.

These Plants at their first Appearance have very narrow Grassy Leaves, very like those of Onions, and do come up with bending Heads, in the same manner as they do, so that Persons who are unacquainted with them, may pull 'em up instead of Grass, whilst they are very young, before their Leaves

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are a little more expanded, which is rarely perform'd the first Year; for they seldom appear before the Middle of *March*, and they commonly decay about the latter End of *May* or the Beginning of *June*, according as the Season is hotter or colder.

The Weeds and Moss should also be clear'd off from the Surface of the Earth in the Boxes, and a little fresh Earth sifted over 'em soon after their Leaves decay, which will be of great Service to the Roots; these Boxes should be constantly kept clear from Weeds, which if permitted to grow therein, when they are pulled up, their Roots will be apt to draw the Bulbs out of the Ground; at *Michaelmas* they should be fresh earth'd again, and as the Winter comes on, so they must be again removed into the Sun as before, and treated in the same manner, until their Leaves decay in the Spring, when their Bulbs should be carefully taken up, and planted in Beds of fresh, sandy Earth, which should have Tiles laid under them, to prevent the Roots from shooting downward, which they often do when there is nothing to stop 'em, and thereby they are destroy'd. The Earth of these Beds should be about five Inches thick upon the Tiles, which will be sufficient for nourishing these Roots while they are young.

The Distance which these young Bulbs should be allow'd, need not be more than two Inches, nor should they be planted above two Inches deep; but toward the End of *October*, it will be proper to cover the Beds over with a little fresh Earth, about an Inch deep, which will preserve the Roots from the Frost, and prevent Moss or Weeds from

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from growing over them. But if the Winter should be very severe, it will be proper to cover the Beds either with Mats or Pease-haulm, to prevent the Frost from entering the Ground, because these Roots are much tenderer while young, than they are after they have acquired Strength.

In the Spring the Surface of the Ground should be gently stirr'd, to make it clean, before the Plants come up; and if the Spring should prove dry, they must be frequently refresh'd with Water, during the Time of their Growth; but this must not be given to them in great Quantities, lest it rot their tender Bulbs; and when their Leaves are decay'd, the Weeds should be taken off, and the Beds covered with fresh Earth, which should also be repeated again in Autumn.

In these Beds the Bulbs may remain two Years, during which time they must be constantly kept clear from Weeds, and in Spring and Autumn fresh earth'd, in the Manner already directed; after which the Bulbs must be taken up, and planted into fresh Beds, at four Inches asunder, and as many deep, where they may remain two Years more, during which time they should have the same Culture as before: And after that, the Bulbs being large enough to blow, they should be taken up, and planted in fresh Beds, at the usual Distance, and in the same manner as old Roots; where, when they flower, such of them as are worthy to be preserved should be mark'd with Sticks, and at the Season for taking up the Bulbs, they must be separated from the others, in order to be planted as Breeders, in different Beds, but you should by no means throw out the rest, until they have

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flowered two or three Years, because it is impossible to judge exactly of their Value in less Time; for many which at first flowering do appear beautiful, will afterwards degenerate so as to be of little Value, and others which did not please at first, will many times improve, so that they should be preserved until their Worth can be well judged of.

In this Method many Sorts of new Breeders will be annually rais'd, from which there will always be fine Flowers broken, which being the Produce of a Person's own Sowing, will be greatly valued, because they are not in other Hands, which is what enhances the Price of all Flowers; and it has been entirely owing to this Method of raising new Flowers, that the *Dutch* have been so famous; amongst whom the Passion for fine *Tulips* did some time since reign so violently, that many of the Florists near *Haerlem*, have often given an hundred Ducats for one single Root; which Extravagance was the Occasion of an Order being made by the *States*, to limit the utmost Price that should be afterwards given for any *Tulip* Root, were it ever so fine.

Having thus given an Account of the Method of raising these Flowers from Seeds, I shall now proceed to the Management of such Roots which are term'd Breeders, so as to have some of them every Year break out into fine Stripes.

There are some who pretend to have Secrets how to make any Sort of Breeders break into Stripes whenever they please; but this I dare say is without Foundation; for from many Experiments which I have made in this Kind, I never could find any Certainty of this Matter:

Matter : All that can be done by Art, is, to shift the Roots every Year into fresh Earth, and a different Situation, by which Method I have had very good Success.

The Earth of these Beds should be every Year different ; for although it is generally agreed, that lean, hungry, fresh Earth doth hasten their breaking, and cause their Stripes to be the finer, and more beautiful ; yet, if they are every Year planted in the same Sort of Soil, it will not have so much Effect on them, as if they were one Year planted in one Sort of Earth, and the next in a very different one, as I have several times experienced.

The best Compost for these Roots is a third Part of fresh Earth from a good Pasture, which should have the Sward rotted with it ; a third Part of Sea Sand ; and the other Part sifted Lime-rubbish ; these should be all mix'd together, six or eight Months at least before it is used, and should be frequently turned, in order to mix the Parts well together. With this Mixture the Beds should be made about eighteen Inches deep, after the following manner : After the old Earth is taken from out of the Bed to the Depth intended, then some of the fresh Earth should be put in about ten Inches thick, this should be level'd exactly, and then Lines drawn each Way of the Bed, chequerwise ; at six Inches distance, upon the Center of each Cross, should be placed the *Tulip* Roots, in an upright Position ; and after having finish'd the Bed in this manner, the Earth must be filled in so as to raise the Bed eight Inches higher, observing in doing this, not to displace any of the Roots, and also to

lay the Top of the Beds a little rounding, to throw off the Water.

There are many Persons who are so careless in planting their *Tulips* Roots, as only to dig and level the Beds well, and then with a blunt Dibble to make Holes, into which they put the Roots, and then fill up the Holes with a Rake ; but this is by no means a good Method, for the Dibble in making the Holes, presses the Earth closely on each Side and at the Bottom, whereby the Moisture is often detain'd so long about the Roots as to rot 'em ; besides, the Earth being hard at the Bottom of the Bulbs, they can't so easily emit their Fibres, which must certainly prejudice the Roots.

These Beds should be sunk, more or less, below the Surface, according to the Moisture or Dryness of the Soil, for the Roots should be so elevated as never to have the Water stand near 'em long, which is very apt to rot them. So that where the Soil is very wet, it will be proper to lay some Lime-rubbish under the Earth, in order to drain off the Wet, and the Beds should be entirely rais'd above the Level of the Ground ; but to prevent their falling down into the Walks, after Frost or hard Rains, it will be proper to raise the Paths between them, either with Sea-Coal Ashes or Rubbish, eight or ten Inches, which will support the Earth of the Beds, and these Paths may slope at each End from the Middle, which will cause the Water to run off as it falls. But where the Soil is dry, the Beds may be sunk a Foot or fourteen Inches below the Surface, for in such Places the Beds need not be more than four or six Inches above the Surface.

face, which will be Allowance enough for their Settling.

During the Winter Season there will be no farther Care required, the Roots being planted thus deep will be in no Danger of suffering by Frost; but in the Spring, when their Leaves begin to appear above-ground, the Earth, upon the Surface of the Beds, should be stirr'd to clear it from Weeds, Moss, &c. and when the Flower-buds begin to come up, they should be guarded from Frost, otherwise they are very subject to blight and decay soon after they appear; but they need only be cover'd in such Nights when there is a Prospect of Frost, for at all other Times they should have as much open Air as possible, without which they will draw up weak, and produce very small Flowers.

When these Breeders are in Flower, you should carefully examine them, to see if any of them have broken into beautiful Stripes, which if you observe, there should be a Stick put into the Ground, by every such Root, to mark 'em, that they may be separated from the Breeders, to plant amongst the strip'd Flowers the following Year; but you should carefully observe whether they have thrown off their former Colour entirely, as also when they decay, to see if they continue beautiful to the last, and not appear smear'd over with the original Colour, in both which Cases they are very subject to go back to their old Colour the next Year; but if their Stripes are distinct and clear to the Bottom, and continue so to the last (which is what the Florists call dying well), there is no great Danger of their returning back again, as hath been by some confidently reported; for if one of

these Flowers is quite broken (as it is term'd), it will never lose its Stripes, though sometimes they will blow much fairer than at others, and the Off-sets will often be more beautiful than the old Roots.

There is nothing more to be observed in the Culture of strip'd Flowers, than what has been directed for Breeders, excepting that these should be arched over with tall Hoops and Rails, that they may be shaded from the Sun in the Day-time, and protected from strong Winds, hard Rains, and frosty Mornings, otherwise the Flowers will continue but a short Time in Beauty; but where these Instructions are duly follow'd, they may be preserv'd in Flower a full Month, which is as long as most other Flowers do continue.

But after their Flowers are faded, their Heads should be broken off, to prevent their seeding; for if this is not observ'd, they will not flower near so well the following Year, and this will cause their Stems to decay sooner than otherwise they would do, so that their Roots may be taken up early in *June*; for they should not remain in the Ground long after their Leaves are decay'd. In taking these Roots out of the Ground, you must be very careful not to bruise or cut 'em, which will endanger their rotting; and, if possible, it should be done a Day or two after Rain. These Roots must be clear'd from their old Covers, and all Sorts of Filth, and spread upon Mats in a shady Place to dry, after which they should be put up in a dry Place, where Vermin can't get to 'em, observing to keep every Sort separated, but they should not be kept too close from the Air, nor suffer'd to lie in Heaps together, lest they should grow mouldy.
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after which they commonly rot when they are planted again.

The Off-sets of these Roots, which are not large enough to produce Flowers the succeeding Year, should be also put by themselves, keeping each Sort distinct; these should be planted about a Month earlier in Autumn than the blowing Roots, in particular Beds in the Flower-Nursery, where they may not be exposed to publick View: But the Earth of the Beds should be prepared for 'em in the same Manner as for larger Roots, tho' these must not be planted above five Inches deep, and may be plac'd much nearer together than those which are to flower, and in one Year most of them will become strong enough to flower, when they may be remov'd into the Flower-Garden, and placed in the Beds amongst those of the same Kinds.

TULIPIFERA; The Tulip-tree.

The Characters are;

The Flower consists of several Leaves, which expand in such a Manner, as (by some Thought) to resemble a Tulip; the Pointal rises in the Center of the Flower, surrounded by a great Number of Chives, and afterwards becomes a squamous Fruit, or Cone growing erect. To these Marks may be added, the Leaves, for the most part, being angular, the upper Part is hollowed as if cut off with Scissars, terminating in two Points.

We have but one Species of this Tree, viz.

TULIPIFERA; *arbor Virginiana.* H. L. The Virginian Tulip-tree.

This Tree is very common in America, where it grows to a great Magnitude, but in England there are at present but very few of them which have arriv'd to any

considerable Stature. This was formerly kept in Pots and Tubs, and housed in Winter with great Care, in which Management the Plants made but poor Progress, nor would ever have produced Flowers. But about fifty Years ago there was one of these Trees planted out in a Wilderness in the Gardens of the Right Honourable the Earl of Peterborough, at Parsons-Green near Fulham, which soon convinc'd the Curious of their Mistake in the Culture of this Tree, by the great Progress it made, and in a few Years after, it produced Flowers. This Tree is yet standing, and annually produces a great Quantity of Flowers, tho' some of the Branches begin to decay, which perhaps may have been occasioned by its being too closely surrounded with other Trees, whose Roots are so much entangled with those of this Tree, that they draw the Nourishment of the Ground from it. In some Years this Tree produces Cones, but they have not ever been perfected so as to contain good Seeds.

There are some other Trees of this Kind which have produced Flowers several Years, though I believe none of them are very large; the biggest I have seen (excepting that at Parsons-Green) is not more than thirty five Feet high; whereas my Lord Peterborough's is upwards of fifty Feet high, and is proportionably large in the Trunk; but this has a naked Body near forty Feet high, all the Branches growing near the Top of the Tree, which might be occasion'd by being so closely surrounded with other Trees; for I have observed, where-ever they have a more open Situation, they are subject to extend their Branches, and do not aspire upwards

wards very much, though they generally have one upright Shoot in the Middle, much after the manner of the Plane-tree, whose manner of Growth is very like that of this Tree.

The Flowers which these Trees produce, are by no means like those of the Tulip, though many Persons have been so incurious as to imagine them so, especially the Inhabitants of *America*, who first gave the Name of *Tulip-tree* unto this Plant, by which Name it has been since call'd by the Inhabitants of *Europe*, who received it from them with the Plants, many Years since; but I have not heard that any of these Trees have flowered in any Part of *Europe*, except in *England*.

Mr. Catesby, in his *Natural History of Carolina, &c.* says, There are some of these Trees in *America*, which are thirty Feet in Circumference, that the Boughs are very unequal and irregular, making several Bends or Elbows, which makes the Trees distinguishable at a great Distance, even when they have no Leaves upon them. They are found in most Parts of the Northern Continent of *America*, from the Cape of *Florida* to *New-England*, where the Timber is of great Use.

This Tree may be propagated from Seeds, which are often brought from *America* in the Cones; these should be taken out in the Spring, and sown in Pots or Boxes fill'd with light fresh Earth, and placed upon a moderate Hot-bed, which should be cover'd only with Mats, and not have Glasses over 'em, because the Glasses will cause the Earth to dry too fast, and thereby spoil the Seeds.

These Pots should be frequently refresh'd with Water, and when the

Plants are come up, they should be plac'd in a shady Situation during the Summer Season, but in Winter they must be put into a Frame, where they may enjoy the open Air in mild Weather, but must be shelter'd from Frost.

In the following Spring the Plants should be taken up, and each planted in a separate small Pot, fill'd with light, fresh Earth, and if these Pots are plunged into a moderate Hot-bed, under Mats, it will promote their Rooting; in Summer these Plants must be remov'd into the Shade, and in Winter into a Frame as before: After this manner they may be treated three or four Years, until they have acquir'd Strength, when they may be turn'd out of the Pots in the Spring, and planted where they are to remain, which should always be near the Shelter of other Trees, where they will grow much better than in an open Situation, provided they are not too much crowded or overhung by large Trees.

There are some People who propagate this Tree by Layers, but they are commonly two or three Years before they take Root, and these do seldom make so strait Trees as those rais'd from Seeds, though indeed they will produce Flowers sooner, as is always the Case with stunted Plants.

This Tree should be planted on a light loamy Soil, not too dry, on which it will thrive much better than upon a strong Clay, or a dry gravelly Ground; for in *America* they are chiefly found upon a moist deep Soil, where they will grow to a prodigious Size. Though it will not be proper to plant these Trees in a Soil which is too moist in *England*, because it might endanger the rotting of the Fibres of the

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the Roots, by the Moisture continuing too long about them, especially if the Bottom be a Clay or a strong Loam, which will detain the Wet.

Laurel-leav'd TULIP-TREE; *vide* Magnolia.

TURKS CAP; *vide* Liliū flore reflexo.

TURKEY WHEAT; *vide* Mays.

TURNIP; *vide* Rapa.

TURNSOLE; *vide* Heliotropium.

TURRITIS; Tower-Mustard.

The Characters are;

The Flower consists of four Leaves, which expand in Form of a Cross, out of whose Empalement rises the Pointal, which afterwards becomes a long smooth Pod, which grows for the most Part upright, and opens into two Parts, in each of which are contain'd many smooth Seeds.

The Species are;

1. TURRITIS; *vulgatior*. J. B. Common Tower-Mustard.

2. TURRITIS; *foliis inferioribus Cichoraceis, ceteris perfoliata*. Tourn. Tower-Mustard, with its under Leaves like those of Cichory, and the upper Leaves like Thorough-wax.

3. TURRITIS; *muralis minor*. Pet. H. B. Wall-Cress, or Tower-Mustard with Daisie Leaves.

4. TURRITIS; *Leucoii folio*. Tourn. Tower-Mustard with a Stock-gilliflower Leaf.

There are several other Species of this Plant, which are preserv'd in curious Botanick Gardens for the Sake of Variety, but as they have little Beauty or Usefulness, so they are seldom cultivated in other Gardens. The three first Sorts do grow wild upon Walls and Buildings in divers Parts of England, but the

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fourth Sort has not been discover'd to grow in this Country, except in Gardens.

They may all be cultivated by sowing their Seeds upon a Bed of light dry Earth in the Spring, and when the Plants are come up, they should be transplanted where they are to remain for good, observing to water 'em until they have taken Root, after which they will require no farther Care, but to clear 'em from Weeds, and the second Year they will produce Seeds, after which the Plants never do continue.

TUSSILAGO; Coltsfoot.

The Characters are;

It hath a radiated Flower, whose Disk consists of many Florets, but the Crown is compos'd of many half Florets; the Embryo's are included in a multifold Flower-cup; which are afterwards turn'd to downy Seeds, fix'd in a Bed. To which Notes may be added, The Flowers appearing before the Leaves, in Spring.

The Species are;

1. TUSSILAGO; *vulgaris*. C. B. P. Common Coltsfoot.

2. TUSSILAGO; *Alpina, rotundifolia, glabra*. C. B. P. Round-leav'd smooth Coltsfoot of the Alps.

The first of these Sorts is very common in watery Places in almost every Part of England, and is rarely kept in Gardens; for the Roots do creep under-ground, and increase so fast, that in a short Time they will spread over a large Spot of Ground.

The second Sort grows wild upon the Alps, from whence it has been transplanted into some curious Botanick Gardens for the Sake of Variety; the Flowers of this are purple, and those of the common Sort are yellow.



VACCARIA; *vide* Lychnis.
VACCINIA; *vide* Vitis
 Idea.

VALERIANA; Valerian.

The Characters are;

The Leaves grow by Pairs, opposite upon the Stalks; the Flower consists of one Leaf, is tubulose, and divided into five Segments at the Top: These Flowers are, for the most Part, collected into a sort of Umbel upon the Top of the Stalks, and are succeeded by oblong flat Seeds, which are winged with a soft Down.

The Species are;

1. **VALERIANA**; *hortensis*, *Phu*, *olusatris folio*, *Dioscoridis*. C. B. P. Great Garden Valerian, or Phu.

2. **VALERIANA**; *sylvestris*, *magna*, *aquatica*. J. B. Great wild Water Valerian.

3. **VALERIANA**; *major*, *sylvestris*, *montana*. C. B. P. Great wild Mountain Valerian.

4. **VALERIANA**; *palustris*, *minor*. C. B. P. Small Marsh Valerian.

5. **VALERIANA**; *rubra*. C. B. P. Red Garden Valerian.

6. **VALERIANA**; *rubra*, *angustifolia*. C. B. P. Narrow-leav'd red Garden Valerian.

7. **VALERIANA**; *marina*, *latifolia*, *major*, *alba*. Mor. Umb. Great broad-leav'd white Sea Valerian.

The first of these Sorts is propagated in England for medicinal Use, and is called in the Shops by the Name of *Phu*, to distinguish it from the *Mountain Valerian*, which is preferr'd to all the other Sorts, by the modern Physicians, though

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the Roots of this first are still continued in some of the capital Medicines.

This Plant is propagated by parting of its Roots, either in Spring or Autumn, which should be planted in Beds of fresh dry Earth, about eight or ten Inches asunder, (for they commonly spread and multiply very fast); if the Season be dry, you must water the Plants until they have taken Root; after which they will require no farther Care, but to keep them clean from Weeds, and in Autumn, when their Leaves are decay'd, the Roots should be taken up and dry'd for Use.

The second Sort is very common in moist Places, and by the Sides of Rivers and Ditches in most Parts of England, but is rarely cultivated in Gardens. The Roots of this Kind, being so common near London, are generally sold in the Markets instead of the third Sort, which is what should always be used, as being by far the strongest and most valuable.

The third Sort is generally found upon dry chalky Soils, in shady Places, in diverse Parts of England, the Roots of which are much preferable to those of the same Kind which are cultivated in Gardens; (as are all the Sorts of Aromatick Plants, when gather'd from their native Places of Growth).

This Plant may be propagated by parting the Roots either in Spring or Autumn, as was directed for the first Sort; but you should always observe to plant them upon a dry fresh undung'd Soil, in which, though the Roots will not make near so great Progress, as in a rich moist Soil, yet they will be much preferable to them for Use. These Roots should also be taken up, when the Leaves decay in Autumn,

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tumn, and preserved dry until used.

The fourth Sort is very common in moist Soils, in divers Parts of *England*, but is seldom propagated in Gardens. This is placed among the Officinal Simples in the *College Dispensatory*, though it is rarely used in Medicine. It may be propagated in a moist Soil, by parting the Roots as the former.

The fifth, sixth, and seventh Sorts are propagated in Gardens for the Beauty of their Flowers, but they are only proper for large Gardens, being very apt to grow too large for small Places. These may be propagated by parting their Roots, in the manner before directed, or from Seeds, which should be sown in Autumn, soon after they are ripe, upon a Bed of light fresh Earth; and in the Spring, when the Plants come up, they should either be transplanted into Nursery-beds, or the Borders where they are to remain for good.

Some of these Plants will flower the first Season, but the second Year they will all flower very strong. They commonly grow about three Feet high, and when the Roots are strong, they will continue flowering most part of the Summer, which renders them worthy of a Place in large Borders, and also in Avenues and other abject Parts of the Garden, they being very hardy, and will grow in almost any Soil or Situation; but their Roots will abide longest in a dry barren Soil; for in rich moist Places they seldom continue more than two Years.

The Seeds of these Kinds will often get into the Joints of old Walls, where they will grow and abide many Years, without any Care or Culture, and produce Flow-

ers most Part of the Summer; and in such a Situation they will endure all Weathers, without the least Injury. These Plants are never used in Medicine.

VALERIANA GRÆCA; vide Polemonium.

VALERIANELLA; Corn-fallet, or Lamb's-lettuce.

The Characters are;

The Leaves grow by Pairs opposite on the Branches; the Branches are always divided into two Parts, and appear at the Top like an Umbrello; the Flower consists of one Leaf, which is cut into many Segments, and is succeeded by one naked Seed, having no Down adhering to it, in which it differs from the Valerian.

The Species are;

1. VALERIANELLA; *arvensis, præcox, humilis, semine compresso*. Mor. Umb. Early low Corn-fallet with a flat Seed.

2. VALERIANELLA; *arvensis, præcox, humilis, foliis serratis*. Tourn. Early low Corn-fallet with serrated Leaves.

3. VALERIANELLA; *arvensis, serotina, altior, semine turgidiore*. Mor. Umb. Taller late Corn-fallet with a turgid Seed.

4. VALERIANELLA; *semine stellato*. C. B. P. Corn-fallet with a starry Seed.

5. VALERIANELLA; *cornucopoides, rubra vel Indica*. Mor. Umb. Red or Indian Corn-fallet resembling the Cornucopia.

The three first Sorts are found wild in several Parts of *England*. The third is often cultivated in Gardens, for Sallets in the Spring, though either of the three may be cultivated for the same Purpose, they being equally good. The Seeds of these Plants should be sown in Autumn, soon after they are ripe, for if they are kept till Spring,

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the Plants seldom come up the same Summer; the Seeds commonly remaining in the Ground, will come up the succeeding Spring, notwithstanding the Place be dug and sowed with other Seeds, as I have often observed.

These Plants will grow in almost any Soil or Situation, and require no farther Care but to keep 'em clear from Weeds, until they are fit for Use: They should always be cut while they are young, for if they are grown pretty large, they will become strong and bitter.

The fourth and fifth Sorts are preserved in Botanick Gardens for Variety, but are not of any Use. These may be propagated by sowing their Seeds in the Spring, upon a Bed of dry Earth, where they may remain to flower and seed.

These are all annual Plants, which must be sown every Year, or their Seeds permitted to scatter upon the Ground, where they will come up, and thrive without any other Culture, than only to clear 'em from Weeds.

VERATRUM; White Hellebore.

The Characters are;

The Flower is naked, consisting of six Leaves, which expand in Form of a Rose, in the Middle of which arises the Pointal, surrounded by six Stamina, or Threads, which afterwards turns to a Fruit, in which, for the most part, three membranaceous Sheaths are gathered into a little Head, and are full of oblong Seeds, resembling a Grain of Wheat, and encompass'd, as it were, by a leafy Wing.

The Species are;

1. VERATRUM; *flore subviridi*. Tourn. White Hellebore with a greenish Flower.

2. VERATRUM; *flore atro-rubente*. Tourn. White Hellebore with a dark red Flower.

The first of these Plants is that which is ordered for medicinal Use, and is, by much, the stronger and more acrid Plant; for when both Sorts are placed near each other, the Snails will entirely devour the Leaves of the second Sort, when at the same time they will scarcely touch those of the first. The second Sort doth also appear sooner in the Spring, and flowers near a Month before the first Sort.

These Plants are very pretty Ornaments when planted in the middle of open Borders of the Pleasure-Garden; for if they are placed near Hedges or Walls, where generally Snails do harbour, they will greatly deface the Leaves, especially of the second Sort, by eating them full of Holes; and as a great Part of the Beauty of these Plants consists in their broad-folded Leaves, so when they are thus defaced, the Pleasure is almost lost.

They may be propagated by parting their Roots toward the latter end of February or the beginning of March, just before they begin to shoot, and should be planted in a light, fresh, rich Soil, in which they will thrive exceedingly, and produce strong Spikes of Flowers. These Roots should not be removed oftener than once in three Years, by which time (if they like the Soil) they will be very strong, and afford many Heads to be taken off; but if they are frequently transplanted, it will prevent their increasing, and cause them to flower very weak.

You may also propagate these Plants by Seeds, which should be sown as soon as ripe, either in a

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Bed

Bed or Box filled with fresh, light Earth, and the Ground kept constantly clear from Weeds. In the Spring the Plants will appear, at which Time, if the Season be dry, you should now and then refresh them with Water, which will greatly promote their Growth; and you must carefully clear them from Weeds, which, if permitted to grow, will soon over-spread and destroy these Plants while young. The Spring following, just before the Plants begin to shoot, you should prepare a Bed of fresh, light Earth, and carefully take up the young Plants (observing not to break their Roots) and plant them therein about six Inches square, where they may remain until they are strong enough to flower, when they should be transplanted into the Borders of the Pleasure-Garden. But as these Plants seldom flower in less than four Years, from Seeds, so this Method of propagating them is not very much practised in England.

VERBASCUM; Mullein.

The Characters are;

The Flower consists of one Leaf, which expands in a circular Form, and is cut into several Segments; out of the Center arises the Pointal, which afterwards becomes an oval, pointed Fruit, divided into two Cells, by a middle Partition, which are filled with small angular Seeds.

The Species are;

1. VERBASCUM; *mas, latifolium, luteum*. C. B. P. Great white Mullein, High-taper, or Cows-Longwort.

2. VERBASCUM; *pulverulentum, flore luteo parvo*. J. B. Hoary Mullein with small yellow Flowers.

3. VERBASCUM; *flore albo parvo*. J. B. White flower'd Mullein.

4. VERBASCUM; *nigrum, flore par-*

vo, apicibus purpureis. J. B. Sage-leav'd black Mullein.

5. VERBASCUM; *blatteria foliis nigrum, amplioribus foliis alutis, apicibus purpurascens*. Hor. Bat. Mullein with a dark Moth-Mullein Leaf, and yellow Flowers with purplish Apices.

6. VERBASCUM; *Orientale, Sophia folio*. T. Cor. Eastern Mullein with a Flix-weed Leaf.

7. VERBASCUM; *nigrum, folio papaveris corniculati*. C. B. P. Black Mullein with a Horn-poppy Leaf.

8. VERBASCUM; *humile, Alpinum, villosum, boraginis folio & flore*. Tourn. Low hairy Alpine Mullein, with a Leaf and Flower like that of Borage, commonly call'd, Bears-eat Sanicle.

The four first Sorts grow wild in divers Parts of England, and are rarely cultivated, except in Botanical Gardens for Variety. The first Sort is that which is used in Medicine, which is the most common of them all, growing upon the Sides of dry Banks, in most Parts of England.

These may be all cultivated by sowing their Seeds in August, on a Bed of light Earth, in an open Situation, where the Plants will come up the succeeding Month, and will endure the Winter's Cold very well, provided they have a dry Soil. In February the Plants should be transplanted where they are to remain, allowing them a great Distance; for they grow pretty tall and large: In June following they will flower, and their Seeds will be ripe in July. But notwithstanding these Plants grow wild in England, yet two or three of each Kind may be admitted in large Gardens, for the Variety of their hoary Leaves, together with the extreme Sweetness of their Flowers,

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Flowers, which have a Scent somewhat like Violets.

The fifth, sixth, and seventh Sorts are not Natives of this Country, but have been obtain'd from abroad; the fifth was sent from *Leyden*, by the learned Dr. *Boerhaave*, but I don't at present know from whence he receiv'd it. The sixth Sort was gather'd by my ingenious Friend Mr. *Henry Hopkey*, upon *Gibraltar Hills*, from whence he sent me the Seeds, which flourish'd in the *Physick Garden* very well two Years, and flower'd extremely, but did not perfect Seeds, and being a biennial Plant is since intirely decay'd.

The seventh Sort was found in the *Levant* by Monsieur *Tournefort*, chief Botanist to the late *French King*, who brought the Seeds to the Royal Gardens at *Paris*, from whence it hath been communicated to several other curious Gardens in *England* and *Holland*. This Plant is also biennial, and rarely produces good Seeds in *England*, unless the Summer be warm and dry.

These Sorts may be propagated in the same Manner as the four first, but should be planted in a warm, dry Situation in Winter, otherwise they are very subject to be destroy'd by Frost, being Natives of warmer Countries.

The eighth Sort is a Native of the *Alps* and *Pyrenean Mountains*, and was formerly preserv'd in several Gardens with great Care, being placed in the Green-house in Winter, as supposing it too tender to endure the Cold of our Climate in the open Air; but this is now treated in a different Manner; for it should be placed, as much as possible, in the Shade, and managed as *Auricula's*, with which Treatment

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it thrives much better than if preserv'd with great Tenderness, and will produce Flowers and Seeds in great Plenty. This Plant may be propagated by Off-sets, as is practis'd for *Auricula's*, and should be planted in a light rich Earth, in which it will multiply very fast.

VERBENA; Vervain.

The Characters are;

It hath a labiated Flower, consisting of one Leaf, whose upper Lip is upright, and, commonly divided into two, but the under Lip is cut into three Parts, so that at the first Sight it appears like a Flower with five Leaves; these Flowers are each succeeded by four naked Seeds, which fill the Calix; to which may be added, the Flowers do generally grow in Spikes or Heads, but not in Whorles round the Stalks.

The Species are;

1. VERBENA; *communis, caruleo flore.* C. B. P. Common Vervain with a blue Flower.

2. VERBENA; *Lusitanica, latifolia, procerior.* Tourn. Taller broad-leav'd Portugal Vervain.

3. VERBENA; *Urtica folio, Canadensis.* H. R. Par. Canada Nettle-leav'd Vervain.

4. VERBENA; *Americana, spica multiplici, foliis Urtica angustioribus, floribus caruleis.* Par. Bat. Prod. American Vervain with many Spikes, narrow Nettle Leaves, and blue Flowers.

There are several other Species of this Plant, which are preserv'd in curious Botanick Gardens; but it is not my Purpose to enumerate them in this Place, as being Plants of no great Beauty or Use.

The first here-mentioned is very common in most Parts, and is rarely cultivated in Gardens; this is the Sort which is directed by the College of Physicians for medicinal Use,

and is brought to the Markets by those who gather it in the Fields.

The other Sorts, though not Natives of this Country, yet are very hardy, and will endure the sharpest of our Winters in the open Air.

These may all be propagated by sowing their Seeds on a Bed of fresh Earth in the Spring, and when the Plants come up they should be transplanted out, or thinned so as to allow them ten or twelve Inches Distance (for they generally grow pretty large, and require to have Room) after which they will require no farther Care, but to clear them from Weeds, and the second Summer they will flower and seed, which, if permitted to fall upon the Ground, will come up the succeeding Spring, without any farther Culture.

VERONICA; Speedwell or Fluellin.

The Characters are;

The Leaves for the most part, grow opposite by Pairs; the Calix consists of one Leaf, which is divided into four Parts, and expands in form of a Star; the Flower consists of one Leaf, which is, for the most part, divided into four Segments, and expands in a circular Order; when the Flower decays, the Ovary becomes a membranaceous Fruit, divided into two Cells, which are shap'd like a Heart, and are fill'd with Seeds, which are sometimes small, and at other times large and thick.

The Species are;

1. VERONICA; *mas, supina, & vulgatissima*. C. B. P. Common Male Speedwell or Fluellin.

2. VERONICA; *spicata, angustifolia*. C. B. P. Narrow-leav'd spik'd Speedwell.

3. VERONICA; *major, latifolia, erecta*, Mor. Hist. Greater broad-leav'd upright Speedwell.

4. VERONICA; *multicaulis, Pannonica*. Tourn. Hungarian Speedwell, bearing many Stalks or Spikes of Flowers.

5. VERONICA; *spicata, Cambro-Britannica, Bugula jubbituto folio*. Raii Syn. Edit. 3. Welsh spiked Speedwell, with a hairy Bugle Leaf.

6. VERONICA; *caerulea, trifido, aut quinquesido folio*. Flor. Bat. Blue Speedwell with a trifid or quinquesid Leaf.

7. VERONICA; *Virginiana, altissima spica multiplici, floribus candidis*. Flor. Bat. Tall Virginian Speedwell, with many Spikes and white Flowers.

8. VERONICA; *spicata, longifolia*. Tourn. Long-leav'd spik'd Speedwell.

9. VERONICA; *petraea, sempervirens*. Pon. Bald. Ever-green Rock Speedwell.

There are many other Species of this Plant, which are cultivated in Botanick Gardens for Variety, some of which are Natives of England, but as they are seldom preserved in Gardens for Pleasure, so I thought it not worth while to enumerate them in this Place; those here-mentioned being the most beautiful, and best worth cultivating for their Flowers.

The first Sort grows wild, in Woods and other shady Places, in divers Parts of England, and is a Plant of little Beauty, but as it is the Sort which is used in Medicine, under the Title of *Paul's Betony*, so I thought it not amiss to set it down here. This is generally brought to Market by such Persons who make it their Business to gather Herbs in the Fields

to supply the same, so that it is not often cultivated in Gardens; but those who have a Mind to propagate it, may do it with much Ease; for as the Branches trail upon the Ground, they push out Roots from their Joints, which Branches being cut off and planted, will take Root and grow in almost any Soil or Situation.

The second, third, and fourth Sorts are very ornamental Plants in the large Borders of the Flower-Garden, particularly the fourth, which produces a great Number of Spikes of beautiful blue Flowers. These continue flowering at least two Months, and in cool, moist Seasons much longer; and these Flowers are very proper to cut for Basins or Flowers-pots to adorn Rooms in the Summer-season.

The fifth Sort is a Native of the Mountains in *Wales*, from whence it hath been transplanted into many curious Gardens. This produces fine large Spikes of blue Flowers, and deserves a Place in every Garden.

The sixth, seventh, eighth, and ninth Sorts are Natives of warmer Countries than *England*, but are hardy enough to endure the Cold of our Winters very well, provided they are planted in a dry Soil. These are all pretty Varieties, and do succeed each other in Flowering, which renders them worthy of a Place in every curious Garden. These should all be planted in the Middle of the Borders in the Pleasure-Garden (except the fifth and ninth, which seldom grow above a Foot high, and so are better placed amongst Flowers of the same Growth) where, being intermix'd with other Flowers, they afford an agreeable Variety.

They may be propagated by parting of their Roots, which commonly increase very fast, so that the raising 'em from Seeds is seldom practis'd. The best Time for parting and transplanting the Roots is in *September*, that they may have Time to take fresh Root before the Winter comes on; and these being fix'd in Autumn, will be much stronger than those which are remov'd in the Spring, and will produce a greater Number of Flowers.

They may be planted in almost any Situation, but should have a middling fresh Soil, not too wet, in which they will thrive exceedingly, and require no farther Care but to keep them clear from Weeds, and to part their Roots every Autumn; for if they are suffer'd to remain too long unremov'd, their Roots will spread, and take up too much Room in the Borders, so as to injure such Plants as grow near them.

VIBURNUM; The Way-faring or Pliant Mealy Tree.

The Characters are;

The Flower consists of one Leaf, which is divided into five Parts, and expands in a circular Order; these are collected into the Form of an Umbrello; the Ovary, which is placed on the upper Part of the Flower, becomes a soft Berry, full of Juice, which contains one stony, compress'd, furrow'd Seed.

The Species are;

1. **VIBURNUM**; *Matth.* The common *Viburnum*, or Pliant Mealy Tree.

2. **VIBURNUM**; *folio variegato*, The common *Viburnum* with strip'd Leaves.

The first of these Trees is very common in divers Parts of *England*, particularly in *Kent*, where

it grows in most of the Hedges upon the dry, chalky Hills near *Gravesend, Rochester, &c.* in very great Plenty. But notwithstanding it being thus common, yet it deserves a Place in small Wilderness Quarters, among other flowering Trees, where, by its mealy Leaves and Shoots, together with its large Bunches of white Flowers in the Spring, which are succeeded by red Berries in *Autumn*, it affords an agreeable Variety.

This Tree may be propagated either from Seeds, or by laying down the tender Branches; but the former Method being tedious, is seldom practis'd, especially since young Plants may be taken from the Woods or Hedges, where there are many of the old Trees growing; from which a Number may soon be propagated.

The best Time for laying these Branches is in Autumn, just as the Leaves begin to fall (the Manner of laying them being the same as for other hardy Trees, need not be repeated;) by the succeeding Autumn the Layers will be rooted, when you may take 'em off from the old Plants, and transplant them into a Nursery for two or three Years, in which they may be train'd up to regular Stems and Heads, and may afterwards be planted where they are to remain. This Tree commonly grows about twelve or fourteen Feet high, but it is rarely seen above sixteen or eighteen, so that it should be planted in Lines with such Trees as do not exceed this Growth; otherwise it will be hid thereby, and the Beauty lost.

The strip'd Sort may be propagated by inarching it upon the plain Sort. This is preserved by such as delight in variegated Plants,

but there is no great Beauty in but these Trees do seldom grow near so large as those of the plain Sort, as is the Case of all other strip'd Plants.

There is also another Sort very like to the Common, which has been introduced into the *English* Gardens lately, which was brought from *Virginia*; but as this Sort has not yet flower'd with us, so I can't say how it differs from ours. This was at first somewhat tender, while young, and in the sharp Winter *Anno* 1728, the Plants of this Kind, which were plac'd in the open Air, were kill'd down to the Ground; but the Roots of most of them shot up again the succeeding Spring, and have since endured the Cold of our Winters very well.

AMERICAN VIBURNUM; *vide* Camara.

VICIA; Vetch.

The Characters are;

It hath a papilionaceous Flower, out of whose Empalement arises the Pointal, which afterwards becomes a Pod full of roundish or angular Seeds; to which must be added, The Leaves grow as it were by Pairs, on a Middle-rib ending in a Tendril.

The Species are;

1. VICIA; *sativa, vulgaris, semine nigro*. C. B. P. Common Vetch or Tare.

2. VICIA; *sativa alba*. C. B. P. White Vetch or Tare.

3. VICIA; *supina, latissimo folio non serrato*. Tourn. Low Vetch, with a broad Leaf not serrated.

4. VICIA; *supina, latissimo folio serrato*. Tourn. Low Vetch, with a broad serrated Leaf.

5. VICIA; *siliquas supra infraque terram edens*. Tourn. Eatable Vetch, having Pods both above and below Ground.

6. VICIA;

6. VICIA; *multiflora*. C. B. P.
Many flower'd Vetch.

There is a great Variety of these Plants, many of which are preserv'd in curious Botanick Gardens; but as they have little Beauty in their Flowers, nor are of much Use, so it would be to little Purpose to enumerate 'em in this Place.

The first of those here mention'd is cultivated in the Fields in divers Parts of *England* for the Seed, which is the common Food of Pigeons: The Method of cultivating it being much the same as is practis'd for *Peas*, I shall not repeat it in this Place, but refer the Reader to that Article.

The second Sort is a Variety of the first, from which it only differs in the Colour of the Flowers and Seeds, which in this kind are both white; but the Flowers of the other kind are purple, and the Seeds are black. This may be cultivated as the former.

The third and fourth Sorts are, at present, only preserv'd in Botanick Gardens in *England*, tho' I believe they might be cultivated in the Fields, as the common Sort, with good Success.

These must be sown in the Spring, as *Peas*, but should have a light, dry Soil, and do require more Room than the common Sort, for the Plants are apt to spread pretty far, provided they like their Situation. They are both annual Plants, which decay soon after their Seeds are ripe. These are suppos'd to be the *Bean* of the ancient *Egyptians*.

The fifth Sort was carry'd from *Africa* into the *West-Indies* (by the *Negroes*, who are very fond of its Fruit) where it thrives prodigiously; and when once well fix'd in the Ground, will propagate itself

very fast: for soon after the Flowers fade, the Pedicle thrusts itself under the Surface of the Earth, where the Fruit is perfected; which if not sought for, and taken up when ripe, will soon shoot out, and make fresh Plants: So that the Persons who have not been acquainted with this Plant, seldom know how and when to look for their Pods, by which Means the *Negroes* generally gather them for their own Use. This Plant is also an Inhabitant of the *East-Indies*, and in divers Parts of *Asia* hath been long cultivated; though there seems to be no extraordinary Quality in it to recommend it. In *England* it is only preserv'd as a Curiosity, and must have the Assistance of a Hot-bed, otherwise the Fruit will not ripen.

The sixth Sort grows wild in divers Parts of *England*, under Hedges, and by the Sides of Woods, where it climbs upon whatever Bushes are near it; and during the Time of flowering (which is commonly in *June* and *July*) it affords an agreeable Prospect. This Plant may be cultivated by the Sides of Wilderness Quarters, where it may be allow'd to climb upon some low Bushes, without which Support it seldom thrives well; and in such shady Situations it will flower extremely, and continue for several Years. The best Way to propagate it, is by sowing the Seeds either in Spring or Autumn, in the Places where they are to remain; for these Plants commonly shoot their Roots downright into the Ground, so that they seldom thrive well if transplanted.

VINCETOXICUM; *vide* Asclepias.

VINE; *vide* Vitis.

VIOLA; Violet.

The

The Characters are;

It hath a polypetalous, anomalous Flower, somewhat resembling the papilionaceous Flower; for its two upper Petals, in some measure, represent the Standard, the two side ones the Wings, but the lower one, which ends in a Tail, in some measure resembles the Keel; out of the Paleament arises the Pointal, which afterwards becomes a Fruit, for the most part three corner'd, opening into three Parts, and full of roundish Seeds.

The Species are;

1. VIOLA; *Martia, purpurea, flore simplici odore*. C. B. P. Common purple Violet, with a sweet-scented Flower.

2. VIOLA; *Martia, major, hirsuta, inodora*. Mor. Hist. Greater hairy March Violes without Smell.

3. VIOLA; *Martia, inodora, sylvestris*. C. B. P. Wild or Dogs Violet.

4. VIOLA; *Martia, alba*. C. B. P. White sweet-scented Violet.

5. VIOLA; *Martia, multiplici flore*. C. B. P. Double purple Violet.

6. VIOLA; *Martia, flore multiplici candido*. C. B. P. Double White Violet.

7. VIOLA; *Martia, folio eleganter variegato, flore albo*. March Violet, with a beautiful variegated Leaf, and a white Flower.

8. VIOLA; *Martia, flore rubello*. March Violet, with a reddish colour'd Flower.

9. VIOLA; *erecta, flore caeruleo*. Mor. Hist. Upright Violet, with a blue Flower.

10. VIOLA; *Montana, lutea, grandiflora*. C. B. P. Mountain Violet, with a large yellow Flower.

11. VIOLA; *tricolor, hortensis, repens*. C. B. P. Pansies, Hearts-ease, or Three-colour'd Violet, commonly call'd, Three Faces under a Hood.

The first Sort here mention'd is very common in Woods and shady Lanes in divers Parts of England, and is what should always be us'd in Medicine; though the People who sell these Flowers in the Markets, do many times impose upon the Ignorant the Flowers of the second Sort, which are much larger than those of the first, and fill up the Measure better; but they having no Smell, are very improper for Use.

All the eight first Sorts are pretty Varieties in a Garden; where being planted under Hedges, in Wildernesses, or other shady Places, they will thrive exceedingly, and will want no other Culture than only to keep them clear from Weeds; and in the Spring, when they are in Flower, they cast forth a most agreeable Perfume, especially in Mornings and Evenings, so that it renders such Places very delightful at that Season.

These may be easily propagated by parting their Roots. The best Time for which, is at *Michaelmas*, that the Plants may take Root before Winter, so that they may flower stronger the succeeding Spring.

The double Sorts, and those without Smell, may be admitted for Variety: But the single blue, white and reddish colour'd Sorts, are those which should be most cultivated; because these are all equally well scented, in which the greatest Curiosity of these Flowers consists. And these all growing wild in England, may be easily obtain'd in Quantity from their Places of Growth, by such who are fond of these Flowers.

The ninth Sort is preserv'd in some curious Gardens for Variety, but there is no Scent in its Flow-

ers, so that it hardly merits a Place in curious Flower Gardens.

The tenth Sort produces large yellow Flowers, which continue a long time: This being a Native of cold mountainous Places, should have a shady cool Situation, and is very proper for North Borders, where it will thrive exceedingly, and continue flowering most Part of the Summer. It is propagated by parting of the Roots, in the same manner as the former.

The eleventh Sort is admitted into Gardens for the beautiful Colours of its Flowers, of which there are a great Number of Varieties, but they have no Scent. This Plant is annual, but will require no other Culture than only to place a few Roots in such Parts of the Garden where you would have them grow, and suffer them to shed their Seeds, which will come up and multiply fast enough; therefore you must observe to reduce them within Compass, otherwise they will spread over the whole Garden. This Plant is plac'd amongst the Officinal Simples in the College Dispensatory.

VIORNA; vide Clematitis.

VIRGA AUREA; Golden-Rod.

The Characters are;

The Leaves are for the most part whole, and are plac'd alternately on the Stalks; the Calix (or Flower-cup) is squamous; the Flowers are small, radiated, and of a yellow Colour, consisting of many Florets, each of which is furnish'd with an Embryo, which afterwards becomes a Seed, having a downy Substance adhering to it: To which should be added, that the Flowers are produc'd in a long Spike.

The Species are;

1. VIRGA AUREA; *vulgaris, latifolia*. J. B. The common or broad-leav'd Golden-Rod.

2. VIRGA AUREA; *montana, folio angusto, subincano, flosculis conglobatis*. Raii Syn. Narrow-leav'd Mountain Golden-Rod, with an hoary Leaf and conglobate Flowers.

3. VIRGA AUREA; *angustifolia, paniculâ speciosâ Canadensis*. H. R. Par. Narrow-leav'd Canada Golden-Rod, with a specious Panicle.

4. VIRGA AUREA; *Canadensis, hirsuta paniculâ minus speciosa*. Boerb. Ind. Rough Canada Golden-Rod, with a less specious Panicle.

5. VIRGA AUREA; *Nove Angliæ, altissima, paniculis nonnunquam reflexis*. Flor. Bat. The tallest New-England Golden-Rod, with a reflex'd Panicle.

6. VIRGA AUREA; *altissima, serotina, paniculâ speciosâ patulâ*, Rand. Tallest Late-flowering Golden-Rod, with a specious spreading Panicle.

7. VIRGA AUREA; *Virginiana, foliis angustioribus, asperis, paniculâ minus speciosâ*. Pluk. Phyt. Virginian Golden-Rod, with narrow rough Leaves, and a less specious Panicle.

8. VIRGA AUREA; *rugosis foliis, Virginiana, paniculâ florum amplissima*. Pluk. Phyt. Rough-leav'd Virginian Golden-Rod, with an ample Panicle of Flowers.

9. VIRGA AUREA; *foliis levibus non serratis paniculâ speciosâ, floribus magnis*. Flor. Bat. Smooth-leav'd Golden-Rod, with a specious Panicle, and large Flowers.

10. VIRGA AUREA; *Marylandica, spicis florum racemosis, foliis integris scabris*. Mart. Hist. Rar. Plant. Golden-Rod from Maryland, with branching Spikes of Flowers, and whole rough Leaves.

11. VIRGA AUREA; *Canadensis Asterisci folio*. Par. Bat. Canada Golden-Rod, with a Leaf like Asteriscus.

12. VIRGA AUREA; *Americana, serrata,*

serrata, floribus ad foliorum alas, conglobatis. Breyn. Prod. American Golden-Rod, with serrated Leaves and conglobated Flowers coming out from the Wings of the Leaves.

13. VIRGA AUREA; *Limonii folio, panicula uno versu disposita. H. R. Par.* Golden-Rod, with a Sea Lavender-leaf, and the Flowers growing upon one Side of the Stalk.

14. VIRGA AUREA; *Noveboracensis, glabra, caulibus rubentibus, foliis angustis glabris. Flor. Bat.* Smooth New-York Golden-Rod, with red Stalks, and narrow, smooth Leaves.

15. VIRGA AUREA; *floribus fistulosis, senecionis instar, foliis angustioribus non serratis. Hist. Oxon.* Golden-Rod, with fistulous Flowers, somewhat like Groundsel, and narrow, smooth Leaves.

16. VIRGA AUREA; *Canadensis, foliis carnosiss non serratis, latioribus. Hist. Oxon.* Canada Golden-Rod, with broad fleshy smooth Leaves.

17. VIRGA AUREA; *Nova-Angliae, foliis longissimis glabris. Flor. Bat.* New-England Golden-Rod, with long, smooth Leaves.

There are several other Varieties of this Plant, which are preserv'd in some curious *Botanick* Gardens; but those here mention'd are the most valuable Sorts which I have yet seen in the *English* Gardens; the greatest Part of which are Natives of *America*, from whence, it is very probable, there may be many other Sorts brought, since these Plants do propagate themselves by shedding their Seeds, which is likely to produce new Varieties annually; as do most other Sorts of Plants, so that there may be no End to their Variety.

These Plants are very great Ornaments in the Borders of large

Flower Gardens, where, by their Succession of Flowering, they afford a very great Pleasure; for the earliest Kinds begin to flower in *June*, which are succeeded by other Sorts until the latter End of *October*; and their Flowers being produc'd for the most Part on long specious Spikes or Panicles, do make a very handsome Appearance, and are very ornamental to Flower-pots, when intermix'd with Flowers of different Colours, to place in Rooms.

They are all easily propagated by parting their Roots in the Spring, before they begin to shoot, and should be planted in the Middle of the larger Borders in the Flower-Garden: They will grow in almost any Soil or Situation, but will thrive best in a light fresh Earth, and an open Exposure, tho' some of the hardest of them may be plac'd under Avenues of Trees, where they will continue in Flower a long time, and look very well. The first twelve Sorts are somewhat hardier than the rest, and will increase very fast by Off-sets, which some of them send forth in very great Plenty, insomuch, that if they are not carefully dug round at least once in every Year, they will spread over the Borders where they are planted, and destroy such Plants as stand near them. The other Sorts should have a warmer Situation, and a dry Soil: These are not so apt to spread at their Roots as the others, so that there will be no Difficulty of keeping them within Bounds.

The first Sort here mention'd is sometimes us'd in Medicine. This grows wild in most shady Woods in the South Parts of *England*; from whence the Roots may be transplanted

transplanted into a shady Part of the Garden, where they will thrive and flower very well.

These are all perennial Plants, which die to the Surface of the Ground every Winter, but rise again the succeeding Spring: Most of them produce their Flowers in Autumn, and, if the Season proves favourable, will ripen their Seeds; which if sown soon after ripe, will come up the following Spring, from whence some new Varieties may be obtain'd.

VISCUM; Mistleto.

The Characters are;

The Flower consists of one Leaf, which is shap'd like a Bason, and for the most part divided into four Parts, and beset with Warts; the Ovary, which is produc'd in the Female Flowers, is plac'd in a remote Part of the Plant (or for the most part on different Plants) from the Male Flowers, and consists of four shorter Leaves; this afterwards becomes a round Berry, full of a glutinous Substance, inclosing a plain Heart-shap'd Seed.

We have but one Species of this Plant in England, viz.

VISCUM; *baccis albis*. C. B. P. Common Mistleto, with white Berries.

This Plant is always produc'd from Seed, and is not to be cultivated in the Earth, as most other Plants, but will always grow upon Trees; from whence the Antients accounted it a Super-plant, most of whom thought it was an Excrescence on the Tree without the Seed being previously lodg'd there: Which Opinion is now generally confuted from a repeated Number of Experiments.

The manner of its being propagated is this; (*viz.*) The Mistleto-Thrush, which feeds upon the Ber-

ries of this Plant, in Winter, when it is ripe, doth often carry the Seeds from Tree to Tree; for the viscous Part of the Berry, which immediately furrounds the Seed, doth sometimes fasten it to the outward Part of the Bird's Beak; which to get disengag'd of, he strikes his Beak against the Branches of a neighbouring Tree, and thereby leaves the Seed sticking by this viscous Matter to the Bark; which if it lights upon a smooth Part of the Tree, will fasten it self thereto, and the following Winter will put out and grow, and in the same manner it may be propagated by Art; for if the Berries, when full ripe, are rubbed upon the smooth Part of the Bark of a Tree, they will adhere closely thereto, and if not destroy'd, will produce Plants the following Winter.

The Trees which this Plant doth most readily take upon, are, the Apple, the Ash, and some other smooth-rind Trees; but I have several times try'd it upon the Oak, without Success, for the Bark of that Tree is of too close a Texture to admit the Seeds striking therein; which is also the Reason it is so rarely found upon that Tree: And notwithstanding the great Encomiums which have been given to the Mistleto of the Oak, for its Medicinal Virtues, yet I can't help thinking, that it is equally good from whatever Tree it be taken, nor is it possible to find this Plant growing in any Quantity upon the Oak; so that those Persons who pretend to furnish the Town with it for Physical Use, do but impose upon the World, for it is so rarely met with, that whenever a Branch of an Oak-tree hath any of these Plants growing upon it, it is cut off, and preserv'd by the

Curious

Curious in their Collections of Natural Curiosities; and of these there are but few to be seen in *England*.

As to what some Persons have asserted of the manner how it is propagated, from Tree to Tree, by the *Mistle-Thrushes*, who eat the Berries, and void the Seed in their Dung, upon the Branches of Trees, whereby the Seeds are stuck thereon, and take Root into the Bark, and produce fresh Plants, I can by no means agree to; since if it were only this way propagated, it would always be found upon the upper Part or the Sides of such Branches, upon which the Dung can only be suppos'd to lodge; whereas it is often found upon the under Side of Branches, where it is almost impossible for these Birds to cast their Dung: Besides, I believe the Stomachs of these Birds are too powerful Digesters to suffer any Seeds to pass intire through the Intestines. But I shall leave this to such who have Leisure to make Observations in such Places where this Plant abounds, and shall add only a short Account of the Method us'd to make Birdlime, which may not be improper to insert in this Place for the Satisfaction of the Curious.

The *Italians* make their Birdlime of the Berries of *Mistleto*, heated and mix'd with Oil, as that made of *Holly-bark*, and to make it bear the Water, they add *Turpentine*.

That which is commonly used with us, is made of the Bark of *Holly*; which they boil for ten or twelve Hours: and when the green Coat is separated from the other, they cover it up for a Fortnight in a moist Place, pounded into a tough Paste, that no Fibres of the Wood be left; then they wash it in a running Stream till no Motes appear,

and put it up to ferment for four or five Days, and skum it as often as any thing arises, and then lay it up for Use. When they use it, they incorporate with it a third Part of that Oil over the Fire.

The Birdlime that is brought from *Damascus* is suppos'd to be made of *Sebestens*, their Kernels being frequently found in it; but this will not endure either Frost or Wet.

The Birdlime brought from *Spain* is of an ill Smell.

The Bark of our *Lantone* or *Way faring Shrub*, as it is said, will make Birdlime as good as the best.

VITEX; *Agnus Castus*, or the Chaste Tree.

The Characters are;

It hath a Flower consisting of one Leaf, which appears as if it had two Lips, the Fore-part is tubulose; from whose Flower-cup rises the Pointal, which afterwards becomes an almost-spherical Fruit, which is divided into four Cells, in which are contained oblong Seeds; to which may be added, The Leaves are digitated (or finger'd) like those of Hemp.

The Species are;

1. VITEX; *foliis angustioribus, cannabis modo dispositis*. C. B. P. The Chaste Tree, with narrow Leaves.

2. VITEX; *latiore folio*. C. B. P. The Chaste Tree, with broad serrated Leaves.

3. VITEX; *sive Agnus, flore albedo*. H. R. Par. The Chaste Tree, with whitish Flowers.

4. VITEX; *sive Agnus minor, foliis angustissimis*. H. R. Par. The lesser Chaste Tree, with very narrow Leaves.

The first of these Plants is pretty common in most *English* Gardens, where a Variety of hardy Trees are preserv'd;

preserv'd; but the other Sorts are less common, and only in some curious Gardens at present. These Plants are all very hardy, and may be propagated by planting their Cuttings early in the Spring, before they shoot; they require a fresh light Soil, and must be frequently refresh'd with Water, until they have taken Root; after which they must be carefully clear'd from Weeds, during the Summer Season; and if the Winter proves severe, you must lay a little Mulch upon the Surface of the Ground between the Plants, to prevent the Frost from penetrating to their Roots, which would injure them while they are young: Toward the Middle of March, if the Season be favourable, you should transplant them either into the Places where they are design'd to remain, or into a Nursery for two or three Years, to get Strength; where they must be prun'd up, in order to form them into regular Plants, otherwise they are very subject to shoot out their Branches in a straggling manner.

If these Plants are plac'd in a warm Situation, and have a kindly light Soil, they will grow to be eight or ten Feet high, and produce their Spikes of Flowers at the Extremity of every strong Shoot in Autumn; which although of no great Beauty, yet coming late in the Year, and having an odd Appearance, together with the Variety of their Leaves, renders them worthy of a Place in small Wilderness Quarters amongst other Shrubs of the same Growth.

They may also be propagated by laying down their Branches in the Spring of the Year (in doing of which, you must be very careful not to break them, for their Shoots

are extremely brittle, and very subject to split off with the least Violence:) These will take Root in one Year, provided they are water'd in very dry Weather; and may then be transplanted out, and manag'd as was directed for those Plants rais'd from Cuttings.

VITIS; The Vine.

The Characters are;

The Flower consists of many Leaves, which are placed in a circular Order, and expand in Form of a Rose; the Ovary, which is situated in the Bottom of the Flower, afterwards becomes an oval or round Fruit, which is very full of Juice, and contains many small Stones in each. To which should be added, That the Tree is climbing, sending forth Claspers at the Joints, by which it fastens it self to whatever Plant stands near it, and the Fruit is produced in Bunches.

The Species are;

1. VITIS; *sylvestris Labrusca. C. B. P.* The Wild Vine, commonly call'd, the Claret Grape. This Sort of Grape is pretty well known in England; it has a Berry of a middling Size, of deep black Colour, covered over with a Bloom like a Plum, which may be wiped off; the Juice stains of a deep red Colour, and before it is quite dead-ripe, is of an austere Taste; the Bunches are pretty large, but short, having commonly two Side-Bunches or Shoulders, on the upper part of the Bunch; the Leaves of this Vine are jagged, and change to a deep red Colour before they fall off.

2. VITIS; *præcox, Columella. H. R. Par.* This is called in England the *July Grape*, but in France, *Morillon* and *Vigne hâstive*. This is the earliest Grape at present known in England, for which it is chiefly preserved,

preserved, for it is not much esteem'd for its Goodness: The Skin is thick, the Juice but very indifferent, and the Berries do commonly grow very thin upon the Bunches. These are of a middle Size, and of a dark, muddy, red Colour.

3. VITIS; *Corinthiaca, sive Apyrina*. *J. B.* The Corinth Grape, vulgarly called, the Currant Grape: Is an early Ripener, the Berry is small and slender, the Juice very sweet, and hath very little Stone. Of this Kind there are two or three different Colours, as Red, Black, and Tawney. This is the Sort which is brought from the Islands near the *Morea*, by the Name of Currants, and sold by the Grocers of London, to put into Puddings, &c.

4. VITIS; *laciniatis foliis. Cornut.* The Parsley-leav'd Grape, *vulgô*. This Sort was originally brought from *Canada*, where it grows wild in the Woods; and is preserv'd in the Gardens of the Curious, for the Variety of its fine jagged Leaves. This is a pretty large white Grape, and has a sweet Juice, but not very vinous; the Berries are very apt to grow thin upon the Bunches, unless the Vine is pruned short, and left but thin with Wood.

5. VITIS; *subhirsuta. C. P. B.* The Morillon Taconné, or Munier, *i. e.* The Miller's Grape; this is called the *Burgundy* in *England*. The Leaves of this Sort are very much powder'd with White, especially in the Spring, when they first come out, from whence it had the Name of *Miller's Grape*. It produces middle-siz'd black Grapes, which grow close upon the Bunches, and are generally short and thick. This is an excellent Bearer, and a hardy Sort.

6. VITIS; *præcox Colusmelle, acinis dulcibus, nigricantibus*. The black Morillon. This is called in *Burgundy*, *Pineau*, and at *Orleans*, *Auverna*. It is a very sweet Grape, of a middle Size, somewhat oval, and of a fine black Colour; the Bunches are somewhat longer than those of the former. This makes very good Wine.

7. VITIS; *uvâ peramplâ, acinis albidis, dulcibus, durioribus. Tourn.* The Chasselas blanc, Bar-sur-Aube, White Chasselas, or Royal Muscadine. This is a large white Grape, and grows close upon the Bunches, which are also very large, and have commonly two small Side-Bunches or Shoulders, produced from the upper Part of the Bunch; the Berries, when full ripe, if well expos'd to the Sun, change to a pale amber Colour, the Juice is very rich, and the Fruit is commonly ripe early in *September*.

8. VITIS; *uva perampla, acinis dulcibus, nigricantibus. Tourn.* The Chasselas Noir, *i. e.* The Black Chasselas. This is very often called the *Black Muscadine*. The Berries of this are as large as those of the former, the Bunches are commonly larger, and are somewhat later ripe; the Juice is very rich. If well exposed, they bear well, and are ripe toward the End of *September*.

9. VITIS; *uva perampla, acinis dulcibus rubentibus. Tourn.* The Red Chasselas. This is also call'd the *Red Muscadine*. The Berries of this Sort are a little larger than those of the former, and grow much thinner upon the Bunches, are of a faint red Colour, and the Juice is very sweet, but later ripe, upon which account it is not so valuable in *England*.

10. VITIS; *uva perampla, acinis ovatis, albidis*. Tourn. The Burdelais, vulgarly called Burlake. The Berries of this Kind are very large, of an oval Shape, and grow pretty close on the Bunches, which are sometimes of a prodigious Size. I have seen a Bunch of these Grapes which has weighed five Pounds. But they never ripen in this Country, so that they are fit for nothing, except *Verjuice*, or to make *Tarts*.

11. VITIS; *acinis albis, dulcissimis; Vitis Apiana*. C.B.P. Garidel. The Muscat, or White Frontinac. The Berries of this Kind are large, and grow extremely close upon the Bunches, which are very long, and have commonly two Shoulders to them: The Fruit, when ripe, has a rich, musky Flavour; but it is commonly very late in the Autumn before they ripen, and the Berries being so very close upon the Bunches, do detain the Moisture in their Middles, so that they commonly perish: To prevent which, some very curious Persons look over their Vines, soon after the Grapes are formed, and with a Pair of Scissers cut out all the small ones, so as to leave the others at a moderate Distance, whereby the Sun and Air is easily admitted, which dissipates the Moisture, and prevents their perishing. This Sort is a great Bearer.

12. VITIS; *acinis rubris, nigricantibus, dulcissimis*. Garidel. The Muscat Rouge, or Red Frontinac. The Berries of this Kind are of the Size of the former, but grow much thinner on the Bunches; it is higher flavour'd, and when thorough ripe, is the richest Grape yet known. But this must have a very dry Soil, and a South-East Aspect, otherwise it seldom ripens well in England.

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13. VITIS; *acinis nigricantibus, dulcissimis*. The Black Frontinac. The Berries of this Kind are less than the two former, but are not so high flavour'd; their Juice is sweet, and they are earlier ripe. This is a good Bearer, but the Grapes upon the same Bunch do seldom ripen at the same Time, so that they can't be gather'd in full Bunches, but must be pick'd off singly as they ripen.

14. VITIS; *Damascena*. H.R. Par. The Damask Grape. The Berries of this Kind are very large, black, and of an oval Form; the Bunches are very large, and the Vine produces vigorous Shoots. This ripens late in England.

15. VITIS; *præcox, acino rotundo, albido, dulci*. The White Sweetwater. The Berries of this Kind are large and white, the Skins are very thin, and the Juice is sweet; this is very early ripe, but the Berries are apt to be thin upon the Bunches; for it is one of the tenderest Sorts, when in Flower, that I have yet seen; so that if there happens bad Weather at that Season, they are very subject to blight, and being so uncertain in bearing, has render'd it less esteem'd than it was formerly.

16. VITIS; *præcox, acino nigro, dulci & rotundo*. The Black Sweetwater. This is a less Grape than the former, it is of a fine black Colour, and grows pretty close upon the Bunches; its Juice is sweet, and it is early ripe.

17. VITIS; *alba dulcis*. J. B. The white Muscadine. The Berries of this Kind are large, of a white Colour, and the Juice is very sweet; the Bunches are long, and it is early ripe.

18. VITIS; *Allobrogica*, Plinil. Car. Steph. Prad. Rust. The Raisin Grape.

I i

Grape. This is a large oval Grape of a blackish Colour, when ripe; the Bunches are very large, and make a fine Appearance, but never ripen well in England. I have known some Persons who had a great Quantity of this Sort of Grape, which they commonly cut in the Middle of October, with pretty long Stalks to the Bunches, and hung them on Strings, in Rows, in their Kitchen, at such a Distance as not to touch each other; and about Christmas, these Grapes will be so ripen'd by the Warmth of the Room, as to eat extreamly well.

19. VITIS; *acino rubro, duriori, sapore dulci. Garidel.* The Greek Grape. This is a middle-siz'd Grape of a deep red Colour, the Skin is very tough, and the Stones are small; this is by many People call'd the Brick Grape. In a kindly Season, when these Grapes ripen well, they make excellent Wine; but it must have a good Wall, otherwise it will not ripen in England.

20. VITIS; *pergulana, uva perampla, acino oblongo, duro, majori & subviridi. Garidel.* The Pearl Grape, called in Provence, Pendoulau, or Rin de Ponso. This is a large, oblong Grape, of a greenish white Colour, the Juice has a Mixture of Sweet and Sour, and it is late ripe.

21. VITIS; *uva perampla, acinis nigricantibus, majoribus.* The St. Peter's Grape, or Hesperian. The Berries of this Sort are very large, round, and of a deep black Colour when ripe; the Bunches are very large, and have two Shoulders to them; the Juice is very rich, and a little ting'd with Red; the Leaves of this Sort are remarkably jagged, so as to be known when there is no Fruit upon the Vines; it is late

ripe. I believe this is the same Sort which the French call *Gros Noir d'Espagne*, i. e. *Great Black Spanish*.

22. *La Malvoſe*, i. e. the *Malmsey Grape*; is a middle-siz'd Fruit, of a muddy red Colour, its Juice is very rich and soft, the Bunches are large, and it is a great Bearer; this ripens toward the latter end of September.

23. *Malvois Musquée*, i. e. the *Malmsey Muscadine*. This is a middle-siz'd Grape, rather long than round, of a rich, musky Flavour when ripe. This is one of the Sorts of Grapes from which the Madera Wine is made. It ripens late in England.

24. The *Red Hamburgh Grape*. The Berries of this Kind are large, and of a reddish Colour, covered with a Flew; the Bunches are large, and it is a good Bearer. This ripens toward the End of September, and is a fine Grape. It was brought into England by Mr. Warner of Rotherhith, who hath supply'd many curious Persons with it.

25. The *Black Hamburgh*, or *Warner Grape*. This has a middle-siz'd Berry, rather long than round, of a fine black Colour, when ripe; the Juice is very rich, somewhat inclining to a musky Flavour. This ripens about the Middle of September. It was brought into England by Mr. Warner, with the former.

26. *Raisin Swisse*, i. e. the *Switzerland Grape*. This is preserved only as a Curiosity; the Fruit of this Kind are strip'd with White and Black, and sometimes divided into Quarters of those Colours, and many times half the Bunch is white, and the other half black, and some intire Bunches are white, and others black, so that it appears as if two Kinds had been grafted on the same

Root

Root. The Fruit is good for little, but Shew, therefore one Plant of this Kind is enough in a Garden.

Beside those here mention'd, there are a great Variety of other Sorts, which are the Produce of warmer Countries, some of which have been introduced lately into *England*; but as it is uncertain at present, how these will ripen in this Climate, I thought it proper to omit mentioning them in this Place; besides, it is very probable, that many of them may prove the same we already have, under different Names; for as these Fruits are brought from different Countries, so they seldom come with the same Names; and it is this hasty Temper to increase the Number of Sorts, which has confounded the present Catalogues of Fruits.

All the Sorts of *Vines* are propagated either from Layers or Cuttings, the former of which is greatly practis'd in *England*, but the latter is what I would recommend, as being much preferable to the other. For the Roots of *Vines* do not grow strong and woody, as in most Sorts of Trees, but are long, slender, and pliant; so that when they are taken out of the Ground, they seldom strike out again, but shrivel and dry, so that they rather retard than help the Plants in their Growth, by preventing the new Fibres from pushing out; for which reason I had rather plant a good Cutting than a rooted Plant, provided it be well chosen, and there is less Danger of its not growing.

But as there are few Persons who make Choice of proper Cuttings, or at least that do form their Cuttings rightly, in *England*, so it will be proper to give Directions for this Work in the first Place, before I proceed. You should always

make Choice of such Shoots as are strong and well ripened of the last Year's Growth; these should be cut from the old *Vine*, just below the Place where they were produced, taking a Knot of the Two-years Wood, which should be pruned smooth; then you should cut off the upper Part of the Shoot, so as to leave the Cutting about sixteen Inches long: Now, in making the Cuttings after this manner, there can be but one taken from each Shoot; whereas most Persons cut them into Lengths of about a Foot, and plant them all, which is very wrong; for the upper Part of the Shoots are never so well ripen'd as the lower Part which was produced early in the Spring; so that if they do take Root, they never make so good Plants, for the Wood of those Cuttings being spongy and soft, admits the Moisture too freely, whereby the Plants will be luxuriant in Growth, but never so fruitful as such whose Wood is closer and more compact.

When the Cuttings are thus prepared, they should be placed with their lower Part into the Ground, in a dry Place, laying some Litter about their upper Parts, to prevent them from drying; in this Situation they may remain until the Beginning of *April*, (which is the best Time for planting them) when you should take them out, and wash them from the Filth they have contracted; and if you find them very dry, you should let them stand with their lower Parts in Water, six or eight Hours, which will distend their Vessels, and dispose them for taking Root. Then set about preparing the Ground where the Plants are designed to remain, (whether against Walls or for Standards) for they should not be removed again.

But as I intend hereafter to treat in particular about the Planting and Management of *Vineyards*, so in this Place I shall confine myself only to such as are planted either against Walls or Pales, for eating.

In preparing the Ground, you should consider the Nature of the Soil, which, if strong and inclinable to Wet, is by no means proper for Grapes; but where it thus happens, you should open a Trench against the Wall, which should be fill'd with Lime Rubbish, the better to drain off the Moisture, then raise the Border with fresh, light Earth, about a Foot thick, so that it may be at least a Foot above the Level of the Ground; then you should open the Holes about six Feet Distance from each other, putting one good strong Cutting into each Hole, which should be laid a little sloping, that their Tops may incline to the Wall; but must be put in so deep, that the uppermost Eye may be level with the Surface of the Ground: for when there are two or three Eyes left above Ground, as is the common Method used by the *English* Gardeners, they do all attempt to shoot, so that the Strength of the Cuttings is divided to nourish so many Shoots, whereas on the contrary, it is all employ'd on one single Shoot, which consequently will be much stronger; besides, the Sun and Air is apt to dry that Part of the Shoots which remains above Ground, and so often prevents their Buds from shooting.

Then, having placed the Cutting into the Hole, you should fill up the Hole gently, pressing down the Earth with your Foot, and raise a little Hill just upon the Top of the Cutting, to cover the upper Eye quite over, which will prevent it from drying. This being done,

there is nothing more necessary, than to keep the Ground clear from Weeds, until the Cuttings begin to shoot, at which time you should look over them carefully, to rub off any dangling Shoots, if such are produced, and fasten the main Shoot to the Wall; which should be constantly fastened up, as it is extended in Length, to prevent its breaking or hanging down. You must continue also, during the Summer Season, constantly rubbing off all lateral Shoots which are produced, leaving only the first main Shoot; and be sure to keep the Ground constantly clear from Weeds, which, if suffer'd to grow, will exhaust the Goodness of the Soil, and starve the Cuttings.

The *Michaelmas* following, if your Cuttings have produced strong Shoots, you should prune them down to two Eyes, (which, tho' by some People may be thought too short, yet I am satisfied, from several Experiments, to be the best Method): The Reason for advising the pruning the *Vines* at this Season, rather than deferring it till Spring, is, because the tender Parts of those young Shoots, if left on, are subject to decay in Winter, and imbibe some noxious Matter from the Air, which greatly weakens their Roots; so that if they are cut off early in Autumn, the Wounds will heal over before the bad Weather, and thereby the Roots will be greatly strengthened.

In the Spring, after the cold Weather is past, you must gently dig up the Borders, to loosen the Earth; but you must be very careful in the doing of this, not to injure the Roots of your *Vines*; you should also raise the Earth up to the Stems of the Plants, so as to cover the old Wood, but not so deep as to

cover either of the Eyes of the last Year's Wood. After this they will require no farther Care until they begin to shoot, when you should look over them carefully, to rub off all weak, dangling Shoots, leaving no more than the two Shoots, which are produced from the two Eyes of the last Year's Wood, which should be fasten'd to the Wall; and so from this, until the *Vines* have done shooting, you should look them over, once in three Weeks, to rub off all lateral Shoots as they are produced, and to fasten the two main Shoots to the Wall; as they are extended in Length, which must not be shortened before the Middle of *July*, when it will be proper to nip off their Tops, which will strengthen the lower Eyes. And during the Summer Season, you must constantly keep the Ground clear from Weeds, nor should you permit any Sort of Plants to grow near the *Vines*, which would not only rob them of Nourishment, but shade the lower Parts of the Shoots, and thereby prevent their ripening; which will not only cause their Wood to be spongy and luxuriant, but render it less fruitful.

At *Michaelmas* you should prune these again, leaving three Buds to each of the Shoots, provided they are strong, otherwise it is better to shorten them down to two Eyes, (for it is very wrong Practice to leave much Wood upon young *Vines*, or to lay their Shoots in too long, which greatly weakens the Roots) then you should fasten them to the Wall, drawing each of them out horizontally from the Stem; and in the Spring, dig the Borders as before.

The third Season you must go over the *Vines* again, so soon as they begin to shoot, rubbing off all

Danglers, as before, and training in the leading Shoots, (which this Season may be supposed to be two from each Shoot of the last Year's Wood; but if they attempt to produce two Shoots from one Eye, the weakest of them must be rubbed off, for there should never be more than one allowed to come out of at Eye). If any of them produce Fruit, as many times they will the third Year, you should not stop them, (so soon as is generally practised upon the bearing Shoots of old *Vines*) but permit them to shoot forward till *Midsummer*, at which time you may pinch off the Tops of the Shoots, for if this were done too soon, it would spoil the Buds for the next Year's Wood, which in young *Vines* must be carefully preserved, because there are no Shoots laid in on purpose for Wood, as is commonly practis'd on old *Vines*.

During this Summer you must constantly go over your *Vines*, and displace all weak, lateral Shoots as they are produced, and carefully keep the Ground clear from Weeds, (as was before directed) that the Shoots may ripen well, which is a material thing to be observed in most Sorts of Fruit-Trees, but especially in *Vines*; which seldom produce any Fruit from immature Branches. These things being duly observed, are all that is necessary in the Management of young *Vines*. I shall therefore proceed to lay down Rules for the Government of grown *Vines*, which I shall do as briefly as possible. And,

First, *Vines* do rarely produce any Bearing-Shoots from Wood that is more than one Year old; therefore great Care should be taken to have such Wood in every Part of the Trees; for the Fruit are always

produced upon Shoots, which come out from the Buds of the last Year's Wood, so that is always upon the same Year's Shoots. The Method commonly practis'd by the Gardeners in *England*, is, to shorten the Branches of the former Years Growth, down to three or four Eyes, at the Time of pruning; tho' there are some Persons who leave these Shoots four or five Eyes long, and affirm, that by this Practice they obtain a greater Quantity of Fruit: But this is very wrong, since it is impossible that one Root can nourish forty or fifty Bunches of Grapes, so well as it can ten or twelve; so that what is gotten in Number is lost in their Magnitude; besides, the greater Quantity of Fruit there is left on *Vines*, the later they are ripen'd, and their Juice is not so rich. And this is well known in the Wine Countries, where there are Laws enacted, to direct the Quantity of Shoots, and the Number of Eyes that those are to have upon each Root, lest by over-bearing them, they not only exhaust and weaken the Roots, but thereby render the Juice weak, and so destroy the Reputation of their *Wine*.

Wherefore, the best Method is, to leave their Bearing-Shoots about four Eyes in Length, (because the lowermost never produce) and three Buds are sufficient, for each of these will produce two or three Bunches; so that from each of those Shoots there may be expected six or eight Bunches, which is a sufficient Quantity. These Shoots must be laid in about eighteen Inches asunder, for if they are closer, when the Side-Shoots are produced, there will not be Room enough to train them in against the Wall, which should always be observed; and as their Leaves are very large, so the Branches

should be left at a proportionable Distance, that they may not crowd or shade each other.

In Pruning, you should always observe to make the Cut just above an Eye, sloping it backward from it, that if it should bleed, the Sap might not flow upon the Bud: And where there is an Opportunity of cutting down some young Shoots to two Eyes, in order to produce vigorous Shoots for the next Year's Bearing, it should always be done; because in stopping of those Shoots which have Fruit upon them in *May*, it often spoils the Eyes for Bearing; and this reserving of new Wood, is what the *Vignerons* abroad do always practise in their Vineyards. The best Season for pruning of *Vines* is the End of *September*, or the Beginning of *October*, for the Reasons before laid down.

The latter End of *April*, or the Beginning of *May*, when the *Vines* begin to shoot, you must carefully look them over, rubbing off all small Buds which may come from the old Wood, which do only produce weak dangling Branches; as also when two Shoots are produc'd from the same Bud, the weakest of them should be displaced, which will cause the others to be the stronger; and the sooner this is done, the better it is for the *Vines*.

In the Middle of *May*, you must go over them again, rubbing off all the dangling Shoots as before, and at the same Time you must nail up all the strong Branches, so that they may not hang from the Wall; for if their Shoots hang down, their Leaves will be turn'd the wrong Way; which when the Shoots are afterwards nail'd upright, will have their back Surface upward; and until the Leaves are turn'd again, and have taken their right Direction, the

the Fruit will not thrive: So that the not observing this Management, will cause the Grapes to be a Fortnight later before they ripen. Besides, by suffering the Fruit to hang from the Wall, and be shaded with the Closeness of the Branches, it is greatly retarded in its Growth: Therefore, during the growing Season, you should constantly look over the *Vines*, displacing all dangling Branches and wild Wood, and fasten up the other Shoots regularly to the Wall, as they are extended in Length; and towards the latter End of *May*, you should stop the Bearing-Branches, which will strengthen the Fruit, provided you always leave three Eyes above the Bunches; for if you stop them too soon, it will injure the Fruit, by taking away that Part of the Branch which is necessary to attract the Nourishment of the Fruit, as also to perspire off the Crudities of the Sap, which is not proper for the Fruit to receive.

But although I recommend the stopping those Shoots which have Fruit at this Season, yet you should by no means stop those which are intended for bearing the next Year, before the Beginning of *July*, lest by stopping them too soon, you cause the Eyes to shoot out strong lateral Branches, whereby they will be greatly injured. These therefore should be train'd upright against the Wall until that Time; when their Tops may be nipp'd off, to give Strength to the lower Buds.

During the Summer Season, you should be very careful to rub off all dangling Branches, and train up the Shoots regularly to the Wall, which will greatly accelerate the Growth of the Fruit; and also admit the Sun and Air to them, which is absolutely necessary to ripen, and

give the Fruit a rich Flavour; but you must never divest the Branches of their Leaves, as is the Practice of some Persons; for altho' the admitting of the Sun is necessary to ripen them, yet if they are too much expos'd thereto, their Skins will be tough, and they will rarely ripen: Besides, the Leaves being absolutely necessary to nourish the Fruit by taking them off, the Fruit is starv'd, and seldom comes to any Size, as I have several times observ'd; therefore a great Regard should be had to the Summer Management of the *Vines*, where Persons are desirous to have their Fruit excellent and duly ripen'd.

When the Fruit are all gather'd, you should prune the *Vines*, whereby the Litter of their Leaves will be intirely remov'd at once, and the Fruit will be the forwarder the succeeding Year, as has been before observ'd,

Having thus treated of the Management of *Vines* against Walls, &c. I come next to the Culture of such as are planted in Vineyards.

Of Vineyards in England.

There have of late Years been but very few Vineyards in *England*, tho' they were formerly very common, as may be gather'd from the several Places in divers Parts of *England*, which yet retain that Name; as also from antient Records, which testify the Quantities of Ground which were allotted for Vineyards, to Abbeys and Monasteries for Wine for the Use of the Inhabitants: But as to the Quality of the Wines which were then produc'd in *England*, we are at present ignorant; and how these Vineyards were rooted up, and became so generally neglected, we have no

very good Accounts left. Whatever might be the Cause of this total Neglect in cultivating *Vines* in *England*, I won't pretend to determine; but such was the Prejudice most People conceiv'd to any Attempts of producing Wine in *England*, that, for some Ages past, every Trial of that kind has been ridiculed by the Generality of People; and at this Day very few Persons will believe it possible to be effected.

Indeed if we judge only by the Success of some modern Essays made near *London*, where small Vineyards have been planted a few Years past, there would be no great Incouragement to begin a Work of this kind, because the Produce of very few of these Vineyards has been so kindly as were to be wish'd. But however this should not deter others from making farther Trials, especially when they consider the many Disadvantages which most or all of these Plantations are attended with: For first, there is scarce one of them plac'd upon a proper Soil and Situation for this Purpose; and secondly, there is not one which is rightly planted and managed, as I shall presently shew: And how can we expect Success from Vineyards under these Disadvantages, when even in *France* or *Italy* they would succeed little better, if their Management were not directed with more Judgment? I shall therefore humbly offer my Opinion, which is founded upon some Trials I have seen made, and from the Instructions which I have receiv'd from several curious Persons abroad, who cultivate Vineyards for their own Use and that of their Friends, and who have been very exact in observing the several Methods in Pra-

ctice amongst the *Vignerons* of those Countries; from whence it is hop'd, that the Prejudice which most People have against a Project of this kind, will either be remov'd, or at least suspended, until Trials have been judiciously made of this Affair.

The first and great Thing to be consider'd in planting Vineyards is, the Choice of *Soils* and *Situations*; which, if not rightly chosen, there will be little Hopes of Success; for upon this the whole Affair greatly depends. The best Soil for a Vineyard in *England*, is such whose Surface is a light, sandy Loam, and not above a Foot deep above the Gravel or Chalk, either of which Bottoms are equally good for *Vines*: But if the Soil is deep, or the Bottom either Clay or a strong Loam, it is by no means proper for this Purpose; for altho' the *Vines* may shoot vigorously, and produce a great Quantity of Grapes, yet these will be later ripe, fuller of Moisture, and so consequently their Juice not mature nor well digested, but will abound with Crudity, which in Fermenting will render the Wine sour and ill-tasted; which is the common Complaint of those who have made Wine in *England*.

Nor is a very rich, light, deep Soil, such as is commonly found near *London*, proper for this Purpose, because the Roots of these *Vines* will be inticed down too deep to receive the Influences of *Sun* and *Air*, and hereby will take in much crude Nourishment, whereby the Fruit will be render'd less valuable, and be later ripe, which is of ill Consequence to these Fruits, which are known to imbibe a great Share of their Nourishment from the Air, which it replete with Moisture (as is commonly

monly the Case in Autumn) must necessarily contribute greatly to render the Juices less perfect: Therefore great Care should be had to the Nature of the Soil upon which they are planted.

The next Thing necessary to be consider'd is, the Situation of the Place; which, if possible, should be on the *North* Side of a River, upon an Elevation inclining to the *South*, with a small gradual Descent, that the Moisture may the better drain off; but if the Ground slopes too much, it is by no means proper for this Purpose: but if at a Distance from this Place, there are larger Hills which defend it from the *North* and *North-West* Winds, it will be of great Service, because hereby the *Sun's* Rays will be reflected with a greater Force, and the cold Winds being kept off, will render the Situation very warm. Add to this, a chalky Surface (which if those Hills do abound with, as there are many Situations in *England* which do) it will still add to the Heat of the Place by reflecting a greater Quantity of the *Sun's* Rays.

The Country about this should be open and hilly; for if it be much planted, or low and boggy, the Air will constantly be fill'd with moist Particles, occasion'd by the plentiful Perspiration of the Trees, or the Exhalations from the adjoining Marshes, whereby the Fruit will be greatly prejudic'd (as was before observ'd.) These Vineyards should always be open to the *East*, that the Morning Sun may come on 'em to dry off the Moisture of the Night early, which by lying too long upon the *Vines*, does greatly retard the Ripening of their Fruit, and renders it crude and ill-tasted: And since the Fruit of

Vines are rarely ever injur'd by *East-erly* Winds, so there will be no Reason to apprehend any Danger from such a Situation; the *South-West*, *North-West*, and *North* Winds being the most injurious to Vineyards in *England* (as indeed they are to most other Fruit) so that, if possible, they should be shelter'd therefrom. Having made Choice of a Soil and Situation proper for this Purpose, the next thing to be done, is to prepare it for Planting. In doing of which, the following Method should be observ'd: In the Spring it should be plough'd as deep as the Surface will admit, turning the Sward into the Bottom of each Furrow; then it should be well harrow'd to break the Clods, and cleanse it from the Roots of noxious Weeds: and after this, it must be constantly kept plough'd and harrow'd for at least one Year, to render the Surface light, and hereby it will be render'd fertile by imbibing the nitrous Particles of the Air (especially if it be long expos'd thereto before it is planted:) Then in *March* the Ground should be well plough'd again; and after having made the Surface pretty even, the Rows should be mark'd out from *South-East* to *North-West*, at the Distance of ten Feet from each other; and these Rows should be cross'd again at five or six Feet Distance, which will mark out the exact Places where each Plant should be plac'd, so that there will be ten Feet Row from Row, and five or six Feet asunder in the Rows, nearer than which they ought never to be planted. And herein most People who have planted Vineyards, have greatly err'd, some having allowed no more than five Feet Row from Row, and the Plants but three Feet asunder in the

the Rows: And others, who think they have been full liberal in this Article, have only planted their *Vines* at six Feet Distance every Way; but neither of these have allow'd a proper Distance to them, as I shall shew: For in the first Place, where the Rows are plac'd too close, there will not be Room for the Sun and Air to pass in between them to dry up the Moisture, which being detain'd amongst the *Vines*, must produce very ill Effects. And secondly, where the *Vines* are plac'd in exact Squares, so near together as six Feet, there can be no Room for the Current of Air to pass between them, when their Branches are extended on each Side, and so consequently the Damps in Autumn will be entangled and detain'd amongst the *Vines*, to the great Prejudice of their Fruit. For since the Autumns in *England* are often attended with Rains, cold Dews, or Fogs, so all proper Care should be taken to remove every thing which may obstruct the drying up the Damps which arise from the Ground.

The skilful *Vignerons* abroad are also sensible how much it contributes to the Goodness of their *Vines* to allow a large Space between the Rows; and therefore where the Quality of the Wine is more regarded than the Quantity, there they never plant their *Vines* at less than ten Feet Row from Row, and some do allow twelve. It was an Observation of *Bellonius*, almost two hundred Years since, that in those Islands of the *Archipelago*, where the Rows of *Vines* were plac'd at a great Distance, the Wine was much preferable to those which were close planted; and this he positively affirms to be the Case in most Countries where he

had travell'd. Indeed, we need not have Recourse to Antiquity for the Truth of such Facts, when we are daily convinc'd of this Truth in all close Plantations of any kind of Fruit, where it is constantly observ'd, that the Fruits in such Places are never so well colour'd, so early ripe, nor near so well flavour'd as those produc'd on Trees, where the Air can freely circulate about them, and the Rays of the Sun have free Access to the Branches, whereby their Juices are better prepar'd before they enter the Fruit.

Having thus consider'd the Distance which is necessary to be allow'd to these Plants, we come next to the Planting: But in order to this, the proper Sorts of Grapes should be judiciously chosen; and in this Particular we have egregiously erred in *England*; all the *Vineyards* at present planted here, are of the sweetest and best Sort of Grapes for Eating, which is contrary to the general Practice of the *Vignerons* abroad, who always observe that such Grapes do never make good Wine, and therefore, from Experience, do make Choice of those Sorts of Grapes, whose Juice, after Fermenting, affords a noble, rich Liquor; which Grapes are always observ'd to be austere, and not by any means palatable. This is also agreeable to the constant Practice of our Cyder-makers in *England*, who always observe, that the best Eating Apples make but poor Cyder; whereas the more rough and austere Sorts, after being press'd and fermented, do afford a strong vinous Liquor. And I believe it will be found true in all Fruits, that where the natural Heat of the Sun ripens and prepares their Juices, so as to render them palatable, whatever Degree of Heat

their

these Juices have more, either by Fermentation, or from any other Cause, will render them weaker and less spirituous. Of this we have many Instances in Fruits; for if we transplant any of our Summer or Autumn Fruits, which ripen perfectly in *England* without the Assistance of Art, into a Climate a few Degrees warmer, these Fruits will be mealy and insipid: So likewise if we bake or stew any of these Fruits, they will be good for little, losing all their Spirit and Flavour by the additional Heat of the Fire; and such Fruits as are by no means eatable raw, are hereby render'd exquisite, which if transplanted into a warmer Climate, have, by the additional Heat of the Sun, been also alter'd so as to exceed the most delicious of our Fruit in this Country.

From whence it is plain, that those Grapes which are agreeable to the Palate for Eating, are not proper for Wine; in making of which, their Juices must undergo a strong Fermentation. Therefore since we have in *England* been only propagating the most palatable Grapes for Eating, and neglected the other Sorts, before we plant Vineyards, we should take Care to be provided with the proper Sorts from abroad; which should be chosen according to the Sort of Wines intended to be imitated: Tho' I believe the most probable Sort to succeed in *England* is the *Auvernat* or true *Burgundy Grape* (which whatever some Persons may pretend, is, at present, very rare, in *England*, most People taking the *Munier Grape* for the *Burgundy*;) This Sort of Grape is most preferr'd in *Burgundy*, *Champaign*, *Orleans*, and most of the other Wine Countries in *France*; and I am in-

form'd, that it succeeds very well in several Places to the North of *Paris*, where proper Care is taken of its Management: So that I should advise such Persons who would try the Success of Vineyards in *England*, to procure Cuttings of this Grape from those Countries; but herein some Person of Integrity and Judgment should be employ'd to get them from such Vineyards where no other Sorts of Grapes are cultivated, which is very rare to find, unless in some particular Vineyards of the Citizens, who are very exact to keep up the Reputation of their Wines; nothing being more common than for the *Vignerons* to plant three or four Sorts of Grapes in the same Vineyard, and at the Time of Vintage to mix them all together, which renders their Wines less delicate than in such Places where they have only this one true Sort of Grape. And here I would caution every one against mixing the Juice of more Grapes than one Sort, which will cause it to ferment at different Times, and in different Manners.

The Cuttings being thus provided (for I would always prefer these to Layers, or rooted Plants, for the Reasons given at the Beginning of the Article *Vitis*) about the Beginning of *April* is the best Season for Planting; when it will be proper to put the lower Ends of the Cuttings in Water about three Inches, setting them upright for six or eight Hours before they are us'd; then at the Center of every cross Mark already made by a Line, to the Distance the *Vines* are design'd, should be a Hole made with a Spade or other Instrument, about a Foot deep: into each of which should be put one strong Cutting, placing it a little sloping, then

then the Hole should be fill'd up with Earth, pressing it gently with the Feet to the Cutting, and raising a little Hill to each about three Inches, so as to just cover the uppermost Eye or Bud, which will prevent the Wind and Sun from drying any Part of the Cuttings, and this upper Eye only will shoot, the under ones most of them will push out Roots; so that this Shoot will be very strong and vigorous.

After they are thus planted, they will require no other Care until they shoot, except to keep the Ground clear from Weeds, which should be constantly observ'd: But as to Watering, or any other Trouble, there will be no Occasion for it, notwithstanding what some People have directed; for in *England* there is no Danger of their miscarrying by Drought. When the Cuttings begin to shoot, there should be a small Stick of about three Feet long stuck down by each, to which the Shoots should be fasten'd to prevent their breaking or lying upon the Ground, so that as the Shoots advance, the Fastening should be renew'd, and all small lateral Shoots (if there are any such produc'd) should be constantly displac'd, and the Ground between the *Vines* always kept clean. This is the whole Management which is requir'd the first Summer.

But at *Michaelmas*, when the *Vines* have done shooting, they should be prun'd; for if they are left unprun'd till Spring, their Shoots being tender (especially towards their upper Parts) will be in Danger of suffering, if the Winter should prove severe.

This Pruning is only to cut down all the Shoots to two Eyes; and if after this is done, the Earth be drawn up in a Hill about each

Plant, it will still be a greater Defence against Frost.

At the Beginning of *March*, the Ground between the *Vines* should be well dug, to loosen it, and render it clean, but you should be careful not to dig deep close to the *Vines*, lest thereby their Roots should be cut or bruis'd; and at the same time the Earth should be again laid up in a Hill about each Plant, but there must be Care taken not to bury the two young Eyes of the former Year's Shoot, which were left to produce new Wood.

At the Beginning of *May*, when the *Vines* are shooting, there should be some Stakes fix'd down to the Side of each Plant, which must be somewhat taller and stronger than those of the former Year; to these the two Shoots (if so many are produc'd) should be fasten'd, and all the small trailing or lateral Shoots should be constantly displac'd, that the other Shoots may be stronger; and the Ground should also be kept very clear from Weeds, as before.

At *Michaelmas* these *Vines* should be prun'd again, in the following Manner. Those of them which have produc'd two strong Shoots of equal Vigour, must be cut down to three Eyes each; but such which have one strong Shoot and a weak one, the strong one must be shorten'd to three Eyes, and the weak one to two; and such *Vines* which have produc'd but one strong Shoot, should be shorten'd down to two Eyes also, in order to obtain more Wood against the succeeding Year.

In the Spring, about the Beginning of *March*, the Ground between the *Vines* should be again dug, as before, and two Stakes should be plac'd down by the Side of all such *Vines* as have two Shoots, at such Distance on each Side of the

the Plant as the Shoots will admit to be fasten'd thereto; and the Shoots should be drawn out on each Side to the Stakes, so as to make an Angle of about forty-five Degrees with the Stem, but by no means should they be bent down horizontally, as is by some practis'd, for the Branches lying too near the Earth are greatly injur'd by the Damps which arise from thence, but especially when they have Fruit, which is never so well tasted, nor so early ripe upon those Branches, as when they are a little more elevated.

In *May*, when the *Vines* begin to shoot, they must be carefully look'd over, and all the weak dangling Shoots should be rubb'd off as they are produc'd, and those Shoots which are produc'd from strong Eyes, should be fasten'd to the Stakes to prevent their being broke off by the Wind. This Management should be repeated at least every three Weeks, from the Beginning of *May* to the End of *July*; by which Means, the Shoots which are train'd up for the succeeding Year will not only be stronger, but also better ripen'd and prepar'd for Bearing, because they will have the Advantage of Sun and Air, which is absolutely necessary to prepare their Juices; whereas, if they are crowded by a Number of small dangling weak Branches, they will shade and exclude the Rays of the Sun from the other Shoots, and so by detaining the Moisture a longer time amongst the Branches, occasion the Vessels of the young Wood to be of a larger Dimension, and hereby the crude Juice finds an easy Passage thro' them; so that the Shoots in Autumn seem to be mostly Pith, and are of a greenish imma-

ture Nature; and where-ever this is observ'd, it is a sure Sign of a bad Quality in the *Vines*.

The Soil also should be constantly kept clean, because if there are any Vegetables (either Weeds or Plants of other Kinds) growing between the *Vines*, it will detain the Dews longer, and by their Perspiration occasion a greater Moisture than would be if the Ground were intirely clear; so that those who plant other Things between their Rows of *Vines*, are guilty of a great Error.

At *Michaelmas* the *Vines* should be prun'd, which Season I approve of rather than the Spring (for Reasons given already;) and this being the third Year from planting, the *Vines* will begin to produce Fruit, therefore they must be prun'd accordingly. Now suppose the two Shoots of the former Year, which were shorten'd to three Eyes, have each of them produc'd two strong Branches the Summer past, then the uppermost of these Shoots upon each Branch should be shorten'd down to three good Eyes (never including the lower Eye, which is situate just above the former Year's Wood, which seldom produces any thing except a weak dangling Shoot;) and the lower Shoots should be shorten'd down to two good Eyes each; these being design'd to produce vigorous Shoots for the succeeding Year, and the former are design'd to bear Fruit: But where the *Vines* are weak, and have not produc'd more than two or three Shoots the last Season, there should be but one of them left with three Eyes for Bearing, the rest must be shorten'd down to two, or if weak, to one good Eye, in order to obtain strong Shoots the following Summer; for there

there is nothing more injurious to *Vines* than the leaving too much Wood upon them, especially while they are young, or the over-bearing them, which will weaken 'em so much, as not to be recover'd again to a good State in several Years, tho' they should be manag'd with all possible Skill.

In *March* the Ground between the *Vines* should be well dug, observing not to injure their Roots by digging too deep near them; but where there are small horizontal Roots produc'd, on or near the Surface of the Ground, they should be prun'd off close to the Place where they were produc'd; these being what the *Vignerons* call Day Roots, and are by no means necessary to be left on: And after having dug the Ground, the Stakes should be plac'd down in the following manner: On each Side of the *Vine* should be a Stake, put in at about sixteen Inches from the Root, to which the two Branches, which were prun'd to three Eyes each, for Bearing, should be fasten'd (observing, as was before directed, not to draw them down too horizontally;) then another taller Stake should be plac'd down near the Foot of the *Vine*, to which the two Shoots, which were prun'd down to two Eyes, should be fasten'd, provided they are long enough for that Purpose; but if not, when their Eyes begin to shoot, these must be train'd upright to the Stakes, to prevent their trailing on the Ground, or being broke by the Wind.

In *May* the *Vines* should be carefully look'd over again, at which Time all weak lateral Branches should be rubb'd off as they are produc'd, and those Shoots which shew Fruit, must be fasten'd with

Bands to the Stakes to prevent their being broke, until they are extended to three Joints beyond the Fruit, where they should be stopp'd: But the Shoots which are design'd for Bearing the following Season, should be kept train'd upright to the middle Stake; by which Method the Fruit-Branches will not shade these middle Shoots, nor will the middle Shoots shade the Fruit; so that each will enjoy the Benefit of Sun and Air.

This Method should be repeated every Fortnight or three Weeks, from the Beginning of *May* to the Middle or latter End of *July*, which will always keep the Shoots in their right Position, whereby their Leaves will not be inverted, which greatly retards the Growth of the Fruit, and by keeping the *Vines* constantly clear from horizontal Shoots, the Fruit will not be crowded with Leaves and shaded, but will have constantly the Advantage of Sun and Air equally, which is of great Consequence; for where the Fruit is cover'd with these dangling Shoots in the Spring, and are afterwards expos'd to the Air, either by divesting these of their Leaves, or else displacing their Branches intirely, as is often practis'd, the Fruit will become hard, and remain at a perfect Stand for three Weeks, and sometimes will never advance afterwards, as I have several times observ'd; therefore there cannot be too much Care taken to keep them constantly in a kindly State of Growth, as the *Vignerons* abroad well know, tho' in *England* it is little regarded by the Generality of Gardeners, who, when their Grapes suffer by this Neglect, immediately complain of the Climate, or the Untowardness of the Season, which is too often a Cover for Neglects of this Nature:

And

And here I can't help taking Notice of the absurd Practice of those who pull off their Leaves from their *Vines*, which are plac'd near the Fruit, in order to let in the Rays of the Sun to ripen them; not considering how much they expose their Fruit to the Cold Dews, which fall plentifully in Autumn, which being imbib'd by the Fruit, does greatly retard them: Besides, no Fruit will ripen so well when entirely expos'd to the Sun, as when they are gently screen'd with Leaves; and by the pulling off these Leaves, which are absolutely necessary to prepare the Juices before they enter the Fruit, the gross Parts of which are perspir'd away by the Leaves, the Fruit must either be depriv'd of Nourishment, or else some of the gross Particles will enter with the more refin'd Parts of the Juice, and thereby render the Fruit worse than it would otherwise be, were the Leaves permitted to remain upon the Branches: For if the weak dangling Shoots are constantly displac'd as they are produc'd, the Fruit will not be too much shaded by the Leaves which are upon the bearing Branches.

When the Fruit is ripe, if the Stalks of the Bunches are cut half through a Fortnight before they are gather'd, it will cause the Juice to be much better, because there will not be near so great a Quantity of Nourishment enter the Fruit, whereby the watry Particles will have Time to evaporate, and the Juice will be better digested. This is practis'd by some of the most curious *Vignerons* in the South of *France*, where they make excellent Wine. But if after the Fruit be cut, it is hung up in a dry Room upon Strings, so as not to

touch each other for a Month before they are press'd, it will also greatly add to the Strength of the Wine, because in that Time a great Quantity of the watery Parts of the Juice will evaporate. This is a constant Practice with some Persons, who inhabit in the *Tyrol* on the Borders of *Italy*, where is made a most delicious rich Wine, as hath been attested by Dr. *Burnet* in his Travels, and I have heard the same from several Gentlemen who have travelled that Road since.

But with all the Care that can possibly be taken, either in the Culture of the *Vines*, or in making the Wine, it will not be near so good while the Vineyard is young, as it will be after it has been planted ten or twelve Years; and it will be constantly mending until it is fifty Years old, as is attested by several curious Persons abroad, as also by the most skilful Wine-Coopers at home, who can tell the produce of a young Vineyard from that of an old one, after it is brought to *England*, by the Colour of the Wine. This Difference is very easily accounted for, from the different Structure of the Vessels of the Plants, those of young *Vines* being larger and of a looser Texture, do easily admit of a larger Quantity of gross Nourishment to pass through them; whereas those of old *Vines*, which are more woody, are more closely constricted, and thereby the Juice is better strain'd in passing through them, which must consequently render it much better, tho' the Grapes from a young Vineyard will be larger, and afford a greater Quantity of Juice: So that People should not be discourag'd, if their Wines at first are not so good as they would wish,

wish; since afterward, when the Vineyard is a few Years older, the Wine may answer their Expectation. As to the Fermenting and Managing the Wine, that is treated of particularly under the Article of *Wines*, to which the Reader is desir'd to turn.

The Vineyard being now arriv'd to a bearing State, should be treated after the following Manner: First, In the Pruning, there should never be too many Branches left upon a Root, nor those too long; for although by doing of this, there may be a greater Quantity of Fruit produc'd, yet the Juice of these will never be so good as when there is a moderate Quantity of Fruit, which will be better nourish'd, and the Roots of the Plants not so much weaken'd, which is found to be of so bad Consequence to Vineyards, that when Gentlemen abroad let out Vineyards to *Vignerons*, there is always a Clause inserted in their Leases to direct how many Shoots shall be left upon each *Vine*, and the Number of Eyes to which the Branches must be shorten'd; because were not the *Vignerons* thus ty'd down, they would overbear the *Vines*, so that in a few Years they would exhaust their Roots, and render them so weak, as not to be recover'd again in several Years, and their Wine would be so bad, as to bring a Disreputation on the Vineyard, to the great Loss of the Proprietor.

The Number of Branches which the *Italians* do generally agree to leave upon a strong *Vine*, are four; two of the strongest have four Eyes, and the two weaker are shorten'd down to two Eyes each; which is very different from the common Practice in *England*, where

it is usual to see six or eight Branches left upon each Root, and those, perhaps, left with six or eight Eyes to each; so that if these are fruitful, one Root must produce near four times the Number of Bunches which the *Italians* do ever permit, and so consequently the Fruit will not be so well nourish'd, and the Roots will also be greatly weaken'd; as is the Case of all Sorts of Fruit-trees, when a greater Number of Fruit is left on than the Trees can nourish.

The next Thing is, constantly to keep the Ground perfectly clean between the *Vines*, never permitting any Sort of Plants or Weeds to grow there: The Ground should also be carefully dug every Spring, and every third Year should have some Manure, which should be of different Sorts, according to the Nature of the Ground, or which can be most conveniently procur'd.

If the Land is stiff, and inclinable to bind on the Surface, then *Sea-Sand* or *Sea-Coal* Ashes are either of them very good Manure for it; but if the Ground be loose and dry, then *Lime* is the best Manure for it. This must be spread thin upon the Surface of the Ground before it is dug, and in digging should be bury'd equally in every Part of the Vineyard. These are much preferable to any Sort of Dung for *Vines*, so that it will be worth the Expence to procure either of them: And as they do require manuring but every third Year, so where the Vineyard is large, it may be divided into three equal Parts; each of which may be manur'd in its Turn, whereby the Expence will be but little every Year; whereas when the Whole is manur'd together it will add to the

the Expence, and in many Places there can't be a sufficient Quantity procured to manure a large Vineyard in one Year.

This Digging and Manuring should always be perform'd about the Beginning of *March*, at which time all the superficial or *Day-Roots*, as they are call'd, must be cut off, but the larger Roots must not be injur'd by the Spade, &c. therefore the Ground close to the Stem of the *Vines* must not be dug too deep. After this is done, the Stakes should be placed down, one on each Side the *Vines*, at about sixteen Inches from their Stems, to which the longest Bearing-branches should be fasten'd, and one Stake close to the Stem, to which the two shorter Branches should be trained upright, to furnish Wood for the succeeding Year.

In the Summer they must be carefully look'd over, as before, rubbing off all weak, dangling Shoots, and training the good ones to the Stakes regularly, as they are produced, and those of them which have Fruit, should be stopp'd in *May*, about three Joints beyond the Bunches; but the upright Shoots, which are design'd for Bearing the following Year, must not be stopp'd 'till the Beginning of *July*, when they may be left about five Feet long; for if they are stopp'd sooner in the Year, it will cause 'em to shoot out many dangling Branches from the Sides of the Eyes, which will not only occasion more Trouble to displace 'em, but also will be injurious to the Eyes or Buds.

N. B. All this Summer-Dressing should be perform'd with the Thumb and Finger, and not with Knives, because the Wounds made by Instruments in Summer, do not

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heal so soon as when stopp'd by gently nipping the leading Bud, which if done before the Shoot is become woody, it may be effected with great Ease, being very tender while young.

When a Vineyard is thus carefully dress'd, it will afford as much Pleasure in viewing it as any Plantation of Trees or Shrubs whatever, the Rows being regular, and if the Stakes are exactly placed, and the upright Shoots stopp'd to an equal Height, there is nothing in Nature which will make a more beautiful Appearance; and during the Season that the *Vines* are in Flower, they do emit a most grateful Scent, especially in a Morning and Evening, and when the Grapes begin to ripen, there will be a fresh Pleasure arising in viewing of them.

But as the Beauty of Vineyards arises from the regular Disposition of the Branches of the *Vines*, so great Care should be taken in their Management, to train 'em regularly, and to provide every Year for new Wood to bear the succeeding Year, because the Wood which has produced Fruit, is commonly cut quite away, after the Fruit is gathered; or at least is shorten'd down to two Eyes, to force out Shoots for the next Year, where there is not a sufficient Number of Branches upon the *Vine*, of those trained upright; so that in Summer, when the *Vines* are in Perfection, there should be six upright Shoots trained for the next Year's Wood, and three or four Bearing-branches, with Fruit on them; more than these ought never to be left upon one *Vine*, for the Reasons before given.

N. B. The *Auvernat*, or *True Burgundy Grape*, is valued in *France*

K k before

before any other Sort, because the Fruit does never grow very close upon the Bunches, so that they are more equally ripen'd, for which Reason it should also be preferr'd in *England*; though, in general, those Sorts are most esteem'd with us that have always close Bunches, which is certainly wrong; for it may be observ'd, that the Grapes upon such Bunches are commonly ripe on one Side, and green on the other, which is a bad Quality for such as are press'd to make Wine.

I shall now subjoin a few Sorts of *Vines* which are preserv'd in some curious Gardens, more for the Sake of Variety than the Value of their Fruit: These are,

1. *VITIS; sylvestris, Virginiana. Park. Theat.* The wild Virginian Grape.

2. *VITIS; vulpina, dicta Virginiana alba. Pluk. Alm.* The Fox Grape, *vulgô*.

3. *VITIS; alba dulcis, foliis variegatis.* The blotch'd-leav'd Vine.

4. *VITIS; alba dulcis, limbis foliorum argentatis.* The strip'd leav'd Vine.

5. *VITIS; quinquefolia, Canadensis scandens. Tourn.* The Virginian Vine or Common Creeper.

The first and second Sorts do grow in great Plenty in the Woods of *America*, where, I have been inform'd, are many other Sorts, some of which do produce Fruit very little inferior to most of our fine Sorts which are cultivated in *Europe*; notwithstanding which, it is generally thought impossible to make Wine in *America*; but this, I dare say, must proceed from a Want of Skill, rather than any bad Quality in the Soil or Climate: So that instead of planting Vineyards on their loose, rich Lands (as hath

generally been practis'd by the Inhabitants of those Countries) if they would plant them upon rising Ground, where the Bottom was rocky or hard near the Surface, I dare say they would have very good Success; for the great Fault complain'd of in those Countries, is, that the Grapes do generally burst before they are fully ripe, which must certainly be occasion'd by their having too much Nourishment; therefore, when they are planted on a poorer Soil, this will be, in part, remedied. Another Cause of this may proceed from the Moisture of the Air (occasion'd by the Perspiration of Trees, &c.) which being imbib'd by the Fruit, may break their Skins. This indeed, can't be prevented until the Country is better clear'd of the Timber; but however, this should caution People not to plant *Vines* in such Places where there are great Quantities of Woods, because of this Effect which it hath on the Grapes. But to return.

These two Sorts of *Vines* are preserv'd in the Gardens of those who are curious in Botany, but I have not seen either of 'em produce Fruit in this Country. These may be propagated by Layers, which will take Root in one Year, and may be taken off and transplanted in the Spring where they are to remain, which should be against a warm Wall, because if they are expos'd to much Cold in Winter, they are often destroy'd, especially while they are young.

Their Pruning and Management is the same with any other Sorts of Grapes, but only they should have fewer Shoots, and those shorten'd down very low, otherwise they will make very weak Shoots, and never arrive to any considerable Strength.

Strength, so will not be capable of producing Fruit.

The two Sorts with strip'd Leaves are also preserv'd by those who are curious in collecting a Variety of Plants. These may be propagated as the other Kinds of Grapes, but are tender, and so must have a warm Situation, otherwise they will not thrive; nor do the Cuttings of these take Root so readily as those whose Leaves are plain: But as there is no very great Beauty in these Plants, so they are scarcely worth cultivating, unless for Variety.

The fifth Sort was originally brought from *America*, but from its Hardiness, and being easy to propagate, is become as common as if it were a Native of this Country.

This Plant is chiefly planted in small Gardens near *London*, where it endures the Smoak better than most other Plants; and being a rampant Grower, is planted against high Walls and Buildings, which it will cover sooner than any other Sort of Plant, and in Summer will look green, which is what the Inhabitants of *London* are greatly pleas'd with. The Branches of this Plant will sometimes shoot twenty or thirty Feet long in one Summer, and do send forth Roots from their Joints whereby they fasten themselves to the Building where they are placed, so that they do not require much Trouble to support them.

The only Culture they require, is to cut out all the small weak Shoots in *March*, and shorten the strong ones to about ten Feet long, which will strengthen them against the succeeding Summer, and cause them to shoot vigorously.

This Plant may be propagated

by Cuttings, which should be planted in the Spring upon a shady Border, where they will take Root freely, and if water'd in dry Weather, will make a great Progress the succeeding Summer, and the Spring after may be transplanted where they are to remain, which may be in almost any Soil or Situation, for they are very hardy Plants.

VITIS IDÆA: The Bilberry or Whortle-berry-bush.

The Characters are;

The Flower consists of one Leaf, which is shap'd like a Pitcher; from whose Empalement arises the Pointal, fix'd like a Nail, in the upper Part of the Flower, which afterwards becomes a soft umbilicated Fruit, or Berry, full of Juice, in which are enclos'd Seeds, for the most part small.

The Species are;

1. VITIS IDÆA; *magna quibusdam, sive Myrtillis grandis.* J. B. The great Bilberry-bush.

2. VITIS IDÆA; *foliis oblongis crenatis, fructu nigricante.* C. B. P. Black Wharts, Whortle-berries, or Bilberry.

3. VITIS IDÆA; *sempervirens, fructu rubro.* J. B. Red Whorts or Whortle-berries.

4. VITIS IDÆA; *Æthiopica, Buxi minoris folio, floribus albicantibus.* H. A. Æthiopian Whortle-berry with a Lesser Box-leaf and white Flowers

5. VITIS IDÆA; *Americana, foliis subrotundis, hirsutis, ex adverso nascentibus, floribus minimis herbaceis, fructu parvo rubro.* American Whortle-berry, with roundish hairy Leaves growing by Pairs, small greenish Flowers, and a small red Fruit, vulgarly call'd, St. Peter's-wort.

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The first and third Sorts do grow wild in *Yorkshire, Derbyshire, Westmoreland*, and other Northern Countries of *England*, as also upon the *Alps*, and other lofty Mountains in several Parts of *Europe*; but can't by Art be cultivated in Gardens near *London*, so as to thrive and produce Fruit. The first commonly grows to the Height of three or four Feet, in its native Places of Growth, and produces great Quantities of Fruit, which the poor Inhabitants of those Countries gather, and sell in the Markets for Tarts, &c. The third Sort is a very humble Plant, seldom growing much taller than the Dwarf *Dutch Box* (which is us'd for edging of Borders:) This produces in its native Places of Growth, large Quantities of red Fruit; but these will rarely grow in Gardens, unless planted in a strong, cold Soil, and a shady Situation.

The second Sort is very common upon marshy or boggy Heaths, in divers Parts of *England*, and will grow to the Height of three or four Feet in such Places, and produce great Quantities of Fruit, which ripen in *July*, and are gathered by the poor People for the same Uses as the first Sort.

This is also very difficult to cultivate in Gardens: The only Method is, to take up some Plants in the Spring, from the Places of its Growth, with Balls of Earth to their Roots, and transplant them into a moist, shady Part of the Garden, where, if the Soil be not too rich or warm, they will thrive tolerably well, provided the Ground is not dug or cleaned, for these Plants will grow best on such Places as are never cultivated. This Sort is directed by the *College of Physicians* to be used in Medicine.

The fourth Sort is a tender Plant which is preserv'd in the Gardens of those who delight in preserving Exotick Plants. This is propagated by Layers, which should be lay'd down in the Spring, observing to make a little Slit in the Part which is laid in the Ground (in the manner as is practis'd in Laying of Carnations) and in dry Weather they must be frequently water'd, which will greatly facilitate their taking Root; and in the following Spring they may be cut off from the old Plants, and planted each into a separate Pot, filled with strong, fresh Earth, and placed upon a moderate Hot-bed which will facilitate their taking fresh Root; but they must be shaded from the Sun with Mats, and frequently water'd.

In the Summer these Plants may be exposed in the open Air, with other hardy Exotick Plants; and in Winter they must be placed in the Green-house, where they should have as much free Air as possible in mild Weather, and must be frequently water'd, otherwise they will not thrive.

These Plants produce their Flowers in Winter and Spring, but do rarely produce Fruit in this Country.

The fifth Sort grows to a Shrub of six or seven Feet high, and though a Native of *America*, yet will endure the severest Cold of our Climate in the open Air. It may easily be propagated by Layers or Suckers, which are generally produced in great Plenty from the Roots of the old Plants; these should be taken off either in Spring or Autumn, and planted out amongst other Shrubs of the same Growth, where they will add to the Diversity, but there is little Beauty

Beauty in them; for their Flowers (which are produced in September) are very small, and of a greenish Colour, so that unless a Person search for them, they may escape the Sight, being always situate amongst the Leaves.

These Flowers are succeeded by small red Fruit, which ripen in Winter, after the Leaves are fallen off, so are more visible than the Flowers. This Fruit is not used in its native Country, it having very little Taste, and being so very small, can't be worth the Trouble of gathering. I suppose this Shrub had the Name of *St. Peter's-wort* impos'd on it before it produced either Flowers or Fruit in England, from the Resemblance which the Leaves of it have to those of *Ascyron*, or *St. Peter's-wort*; for in other respects it differs widely from the Characters of that Genus.

VITIS SYLVESTRIS; vide Clematidis.

ULMUS: The Elm-Tree.

The Characters are;

The Flower consists of one Leaf, which is shap'd like a Bell, having many Stamina (or Threads) in the Center; from the Bottom arises the Pointal, which afterwards becomes a membranaceous or leafy Fruit, almost Heart-shap'd, in the Middle of which is placed a Pear-shap'd Seed-Vessel, containing one Seed, for the most part of the same Shape.

The Species are;

1. ULMUS; *vulgatissima*, folio lato scabro. Ger. Emac. The common rough-leav'd Elm.

2. ULMUS; folio latissimo scabro. Ger. Emac. The Witch-Hazel, or broad-leav'd Elm, by some unskilful Persons called the British Elm.

3. ULMUS; minor, folio angusto scabro. Ger. Emac. The small-leav'd or English Elm.

4. ULMUS; folio, glabro. Ger. Emac. The smooth-leav'd, or Witch-Elm.

5. ULMUS; major Hollandica, angustus & magis acuminatis samarris, folio latissimo scabro. Pluk. Alm. The Dutch Elm.

6. ULMUS; minor, folio angusto scabro, elegantissime variegato. The English Elm with beautiful strip'd Leaves.

7. ULMUS; folio glabro eleganter variegato. The Witch-Elm with strip'd Leaves.

8. ULMUS; minor foliis flavescentibus. The yellow-leav'd Elm.

9. ULMUS; major Hollandica, angustis & magis acuminatis samarris, folio latissimo scabro, eleganter variegato. The Dutch Elm with strip'd Leaves.

The four first-mention'd Sorts are very common in divers Parts of England, though it is generally believ'd neither of 'em were originally Natives of this Country; but however that be, they have propagated themselves by Seeds and Suckers which have arose from the Roots of old Trees, in such Plenty, as hardly to be rooted out, where they have long had Possession, especially in Hedge Rows, where there is Harbour for their Roots, which, when left undisturb'd, will send forth a fresh Parcel of young Plants annually, from whence the People who supply the Nursery-men do gather them.

The fifth Sort is equally hardy, and almost as common in England as either of the former; this is pretty quick of Growth while young, and will outstrip the common English Elm for several Years; but after twenty or thirty Years Growth, the English Elm will get the better every Year, and the Timber thereof being much pre-

ferable to that of the *Dutch Elm*, renders it more valuable for Planting.

The Sorts with strip'd Leaves are preserv'd by those who are curious in collecting variegated Plants, but they are not worth propagating unless for the sake of Variety; being of slower Growth, and in most People's Judgment, less beautiful than the plain Sorts.

These Plants may be either propagated by Layers or Suckers taken from the Roots of the old Trees, the latter of which is greatly practis'd in many Places; but as these are often cut up with very indifferent Roots, so they very often miscarry, and render the Success doubtful; whereas those which are propagated by Layers are in no Hazard, and do always make better Roots, and come on faster than the other, for which Reasons this Method should be more universally practis'd. And since a small Compass of Ground fill'd with Stools of these Plants, will be sufficient to furnish a Nursery of a considerable Extent, with Layers to be transplanted, so it is richly worth every Person's while, who would cultivate these Trees, to allot a Piece of Ground for this Purpose.

The best Soil for such a Nursery is a fresh Hazel Loam, neither too light and dry, nor over moist and heavy; this Ground should be well trench'd, and a little rotten Dung bury'd therein; and in doing of this, great Care should be taken to pick out all Roots of pernicious Weeds, which if left in the Ground would be very injurious to the Layers, and can't afterwards be so easily rooted out; then having laid the Ground level, the Plants must be planted at about eight Feet asunder each Way. The best Season for

this Work is in Autumn, as soon as the Leaves begin to decay, that they may take Root before the dry Weather in the Spring comes on, whereby a great Expence of watering them will be sav'd; for if they are well settled in the Ground before the dry Weather, they will require little more than to mulch their Roots, to keep the Earth from drying.

These Plants should be permitted to grow rude two Years, during which Time the Ground between should be carefully cleaned and dug every Spring; by this Time they will be strongly rooted, and have made pretty strong Shoots, so that they may be lay'd in the Ground: The manner of performing this being already described in the Article of *Layers*, I shall forbear repeating it in this Place.

When these *Layers* are well rooted, they should be taken off and transplanted out into a Nursery, which should be upon a good Soil and well prepared (as before for the Stools). The Plants should be planted in Rows four Feet asunder, and two Feet Distance Plant from Plant in the Rows. This should be done in Autumn, as soon as the Leaves begin to decay; and if there is some Mulch laid upon the Surface of the Ground about their Roots, it will preserve 'em from being hurt by Frost in Winter, and from drying Winds in Spring, and thereby secure them from all Hazard.

The following Summer the Ground between 'em should be constantly kept clean from Weeds, and in Autumn they should be pruned up, cutting off all strong lateral Shoots, which, if left on, would impede their upright Growth; but there must be some of the smaller Shoots

Shoots left on to detain the Sap, in order to augment the Stems of the Trees; for where they are pruned up too naked, they are apt to grow up too slender to support themselves, so that their Heads will recline to the Ground, and cause their Stems to grow crooked.

In this Nursery they may remain five or six Years, observing constantly to dig the Ground between 'em every Spring, and to trim them as before directed, which will promote their Growth, and render them strong enough to transplant out where they are to remain, in the Time before-mention'd.

These Trees are very proper to plant in Hedge-Rows, upon the Borders of Fields, where they will thrive much better than when planted in a Wood or close Plantation, and their Shade will not be very injurious to whatever grows under them; but when these Trees are transplanted out upon Banks after this manner, the Banks should be well wrought and clear'd from all other Roots, otherwise the Plants, being taken from a better Soil, will not make much Progress in these Places. About *Michaelmas* will be a good Time for this Work, for the Reasons before assigned, but when they are planted, there should be some Stakes fix'd in by them, to which they should be fasten'd, to prevent their being displaced by the Wind; and part of their Heads should be taken off, before they are planted, which will also be of Use in preventing their being easily overturn'd by Winds, but by no means should their leading Shoot be stopp'd, nor their Branches too closely cut off; for if there are not some Shoots left on to draw and attract the Sap, they will be in Danger of miscarrying.

These Trees are also proper to plant at a Distance from a Garden or Building, to break the Violence of Winds, for which Purpose there is not any Tree more useful; for they may be trained up in Form of a Hedge, keeping 'em cut every Year, which will cause 'em to grow very close and handsome, to the Height of forty or fifty Feet, and be a great Protection against the Fury of Winds; but they should not be planted too near a Garden, where Fruit-trees or other Plants are placed, because the Roots of the *Elms* do run superficially near the Top of the Ground to a great Width, and will intermix with the Roots of the other Trees, and deprive 'em of Nourishment; nor should they be planted near Gravel or Grass-Walks, which are design'd to be well kept, because the Roots will run into them, and send forth Suckers in great Plenty, which will deface the Walks, and render them unsightly.

But for large Gardens, where Shade is required, there is scarce any Tree so proper for that Purpose, being easy to remove when grown to a considerable Size, so that a Person who is willing to have his Plantations for Shade in a short Time, may procure Trees of two Feet Circumference in their Trunk, which will be in no Danger of succeeding, provided they are removed with Care; and these will take Root and grow again, almost as well as young Plants, which is what few other Sorts of Trees will do; but then they should be such Trees as have been thus regularly train'd up in a Nursery, and have good Roots, and not such as are taken out of Hedge-Rows, (as is by some practis'd) which seldom rise with any tolerable

Roots, and consequently do often miscarry.

In Planting of these Trees, great Care should be taken not to bury their Roots too deep, which is very injurious to them, especially if they are planted on a moist *Loam* or *Clay*, in which Case, if the *Clay* is near the Surface, it will be the best Way to raise the Ground in a Hill, where each Tree is to be placed, which will advance their Roots above the Surface of the Ground, so that they will not be in Danger of rotting in Winter with Moisture.

When these Trees are propagated by Suckers taken from the Foot of old Trees, they are commonly lay'd into the Ground very close in Beds, where, in dry Weather, they may be frequently water'd, to encourage their putting out Roots: In these Beds they are left two Years, by which time those that live will be well rooted (though a great many of them generally die); then they should be transplanted into the Nursery, and manag'd as hath been directed for the *Layers*.

There are some who raise the *Witch-Elm* from Seeds, which it generally produces in great Plenty, and are ripe in *April*. These should be sown upon a Bed of fresh, loamy Earth, and gently cover'd; in dry Weather they should be water'd, and if the Bed is shaded from the violent Heat of the Sun, it will be of great Service to the Seeds (for I always observe, the Plants to come up better in the Shade than when exposed to the Sun); when the Plants come up, they should be carefully clear'd from Weeds, and after they have stood two Years in the Seed-bed, they will be fit to plant out into the Nursery, where they must be manag'd as the former.

Sometimes the common *English Elm* will produce Seeds, but it is not so constantly fruitful as the *Witch-Elm*, which seldom fails to produce great Quantities, when they have arriv'd to a due Maturity, which Seeds will fall to the Ground; and when they light upon a Spot which is not disturb'd, the Plants will come up in great Plenty.

The Timber of the common *English Elm* is generally preferr'd to the rest, though that of the *Witch-Elm* is often as good, and is the largest Tree, when planted on a kindly Soil: But the *Dutch Elm* affords the worst Timber, and never will grow to the Stature of either of the other Sorts, so that this should not be cultivated for the Timber; therefore the best Way to be sure of the Kinds which a Person would chuse to propagate, is to have a Nursery of Stools, in order to furnish Layers; for when they are grubbed up from Hedge-Rows, there will often be many Sorts intermix'd, especially if the People who go about to gather 'em do furnish them, because they take 'em indifferently where-ever they can procure them; so that when they are planted out thus blended together, there will be a considerable Difference in the Growths, which will deface the Plantation.

URTICA; The Nettle.

The Characters are;

It hath an apetalous Flower, consisting of many Stamina included in an Empalement, but these are barren; for the Embryo's are produced either on different Plants, or on different Parts of the same Plant, without any visible Flower, which afterwards become a bivalve Seed-vessel, sometimes gathered into round Heads, and at other times are small and hairy, enclosing several Seeds.

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The Species are ;

1. URTICA; *urens, maxima*. C. B. P. The greatest Stinging-nettle.

2. URTICA; *urens, minor*. C. B. P. The lesser Stinging-nettle.

3. URTICA; *urens, pilulas ferens, 1. Dioscoridis, semine lini*. C. B. P. Pill-bearing Stinging-nettle, with a Seed like Flax.

4. URTICA; *altera, pilulifera, Parietaria foliis*. H. R. Par. Another Pill-bearing Stinging-nettle with Leaves like Pellitory, commonly called Spanish Marjoram.

5. URTICA; *pilulifera, folio angustiori, caule viridi, Balearica. Salvad.* Narrower-leav'd Pill-bearing Stinging-nettle from Majorca, with a green Stalk.

The first of these Sorts is a very common Weed upon the Sides of Banks, Ditches, and other uncultivated Places, where its Roots will spread and over-run the Ground, so that it should always be carefully extirpated from Gardens. It is sometimes used in Medicine, but may be easily procured from the Fields at almost any Season.

The second Sort is also a very common Weed in Gardens, and cultivated Fields, but it being an annual Plant, is not so difficult to eradicate as the former.

The third, fourth, and fifth Sorts are preserved in many Gardens for Variety, but the fourth, which is commonly call'd *Spanish Marjoram*, is the most common in *English* Gardens, where it is cultivated for making Sport, many ignorant Persons taking it for a Sort of *Marjoram*, are often severely stung by smelling to it; and others put it into the Middle of Nosegays, amongst other Greens, which they present to Persons who are not acquainted with the Plant, and so by smelling

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to it, they suffer in like manner as the former.

The third Sort is mention'd to grow wild in *England*, but the other two are brought from warmer Countries.

All these Plants may be easily propagated by sowing their Seeds in *March*, upon a Bed of light rich Earth, and when the Plants are come up, they should be transplanted out into Beds, or the Borders of the Pleasure-Garden, interspersing 'em amongst other Plants, so that they may not be so easily discover'd by Persons whom there is a Design to deceive, by gathering a Sprig from them to smell to; after the Plants have taken Root, they will require no farther Care, but only to keep 'em clear from Weeds; in *June* they will flower, and their Seeds will ripen in Autumn, which, if permitted to shed upon the Ground, will come up the following Spring, and flourish without any farther Care.

The Seeds of the third Sort are sometimes used in Medicine.



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WALKS: In order to the laying *Walks* in Gardens, it will be very proper that the Bottom of them be fill'd with some Lime-rubbish or coarse Gravel, Flint-stones, or other rocky Stuff, which will be very serviceable in preventing Weeds from growing through the Superficies of Gravel; this Bottom should be laid eight or ten Inches thick, over which the Coat of

of Gravel should be six or eight, which Gravel should be fine, but yet not skreen'd, because that spoils it. This should be laid on a Heap, rounding, so that the larger rough Stones may run down on the Sides, which being every now and then rak'd off, the Gravel by that means will be sufficiently fine.

After the Gravel has been laid to the Thickness above-mention'd, then the *Walks* must be rak'd true and level, from all great Drips as well as little Holes; by this means most of the Stones of the *Walks* will be rak'd under your Feet, which should rather be gently sprinkled back again, over the last Length that is rak'd, than bury'd (as is the Practice of many Gardeners), for by this means the *Walk* will lie much harder, and the coarsest Stones will very much contribute to its Firmness.

There is also a great Fault committed frequently, in laying *Walks* too round, and some to that Degree, that they cannot be walk'd on with that Ease and Pleasure that ought to be; and besides, this too great Rounding takes off much from the seeming Breadth of the *Walk*.

The common Allowance for a *Gravel-walk* of five Feet Breadth, is an Inch in the Crown; so that if a *Walk* be twenty Feet wide, according to this Proportion, it will be four Inches higher in the Middle than on each Side; and a *Walk* of twenty-five Feet, will be five Inches; one of thirty Feet, six Inches; and so on.

When a *Walk* has been thus carefully laid, or rather after every Length or Part of it, (which commonly is about fifteen Feet each), then it should be rolled well, both in length and also cross-ways: The

Person who rolls it should wear Shoes with flat Heels, that he may not make Holes in the *Walks*; for when they are once made in a new *Walk*, it will not be easy to roll them out again.

In order to lay *Gravel-walks* firm, it will be necessary to give them three or four Water-rollings; that is, they must be rolled when it rains so very fast, that the *Walks* swim with Water; this will cause the Gravel to bind; so that when the *Walks* come to be dry, they will be as hard as a Terraß.

Iron-mould Gravel is accounted the best for Binding; or Gravel with a little binding Loam amongst it; which latter, tho' it be apt to stick to the Heels of Shoes, in hot wet Weather, yet nothing binds better in dry Weather.

When the Gravel is over sandy or sharp, Loam is frequently mix'd with it, which, if they be cast together in Heaps, and well mixed, will bind like a Rock; whereas loose Gravel is as uncomfortable and uneasy to walk on, as any other Fault in a *Walk* can render it.

The best Gravel for *Walks* is such as abounds with smooth Pebbles (as is that dug at *Black-heath*), which being mix'd with a due Proportion of Loam, will bind like a Rock, and is never injur'd by wet or dry Weather; and the Pebbles being smooth, are not so liable to be turn'd up, and loosen'd by the Feet in walking, as are those which are angular and rough; for where *Walks* are laid with such Gravel as is full of irregular Stones, they appear unsightly in a Day's time after Rolling, because the Stones will rise upon the Surface whenever they are walk'd upon, but the smooth Pebbles will remain hand-

handsome two or three Days without Rolling.

The Width of these *Walks* must always be proportion'd to their Length, and the Size of the Garden; but small *Walks* are every where disagreeable; so that if the *Walks* were to be only two hundred Feet long, I should advise 'em to be made fourteen or fifteen Feet wide; for it is much better to have but few *Walks* in a Garden, and those to be spacious, than to make many small *Walks*, as is often practised.

Grass-walks in a Garden are both ornamental and delightful, in Summer time and dry Weather.

These may be made either by laying them with Turf, or sowing them with Hay-seed, and raking them fine and level, which, with keeping them well rolled, and frequently mow'd, will make the Grass fine.

These may be laid a little rounding, to cast off the Water the better, but the Slope must not be so great as to be discover'd with the Eye: About a fourth Part of the roundness allow'd for *Gravel-walks*, will be sufficient for these, if in wet Ground, but if the Ground be dry, it is the best Way to lay 'em quite level.

Sometimes there are Water-tables on each Side of these *Walks*, which are very good for draining them, and also for keeping the Grass and Weeds from mixing with the Borders; and besides, these Water-tables render the *Walks* the handsomer, and appear the more beautiful.

These Water-tables ought to be new cut once or twice a Year, and this ought to be done by a strait Line, as exactly as possible.

The oftener these *Walks* are mowed and rolled in Summer, the

thicker their Bottoms will be; and in Autumn the Grass should be kept very short, and well rolled, for if it be permitted to grow pretty long at this Season, the Blade will decay in Winter, and greatly injure their Roots. The Worm-casts must also be beat to Pieces with a long Ash-Pole, and so spread over the Grass; this the Gardeners call *Polling of a Walk*, which is done by brushing the Surface of the Ground strongly with a slender Pole; the oftener this is repeated the better it is for the Grass, besides, it will destroy the Worm-casts, and render the *Walks* more beautiful.

WALL-FLOWER; *vide* Leucorum.

WALNUT; *vide* Nux juglans.

WATER, is one of the most considerable Requisites belonging to a Garden; if a Garden be without it, it brings a certain Mortality upon whatsoever is planted. By Waterings the great Droughts in Summer are allay'd, which would infallibly burn up most Plants, had we not the Help of *Water* to qualify the excessive Heats: besides, as to noble Seats, the Beauty that *Water* will add, in making *Fet d'Eaux*, Canals, and Cascades, which are some of the noblest Ornaments of a Garden.

WILDERNESSES, if rightly situated, artfully contrived, and judiciously planted, are the greatest Ornaments to a fine Garden: But it is rare to see these so well executed in Gardens, as to afford the Owner due Pleasure, (especially if he is a Person of an elegant Taste) for either they are so situated as to hinder a distant Prospect, or else are not judiciously planted: The latter of which is scarce ever to be found in any of our most magnificent Gardens, very few of their
Designers

Designers ever studying the natural Growth of Plants, so as to place them in such manner, that they may not obstruct the Sight from the several Parts of the Plantation which are presented to the View: Therefore I shall briefly set down what has occurred to me from time to time, when I have considered these Parts of Gardens, whereby a Person will be capable to form an Idea of the true Beauties, which ought always to be studied in the Contrivance of *Wildernesses*.

1. *Wildernesses* should always be proportion'd to the Extent of the Gardens in which they are made, that they may correspond in Magnitude with the other Parts of the Garden; for it is very ridiculous to see a large *Wilderness* planted with tall Trees in a small Spot of Ground; and on the other hand, nothing can be more absurd than to see little paultry Squares, or Quarters of *Wilderness*-work in a magnificent large Garden.

2. As to the Situation of *Wildernesses*, they should never be placed too near the Habitation, because the great Quantity of Moisture which is perspired from the Trees, will cause a damp unwholesome Air about the House, which is often of ill Consequence. Nor should they be situated so as to obstruct any distant Prospect of the Country, which should always be preserved where-ever it can be obtained, there being nothing so agreeable to the Mind as an unconfined Prospect of the adjacent Country. But where the Sight is confined within the Limits of the Garden from its Situation, then there is nothing so agreeable to terminate the Prospect, as a beautiful Scene of the various Kinds of Trees judiciously planted;

and if it is so contrived, that the Termination is planted circularly, with the Concave toward the Sight, it will have a much better Effect than if it end in strait Lines or Angles, which are never so agreeable to the Mind.

3. The Plants should always be adapted to the Size of the Plantation; for 'tis very absurd to see tall Trees planted in small Squares of a little Garden; and so likewise, if in large Designs are planted nothing but small Shrubs, it will have a mean Appearance: It should also be observed, never to plant Ever-greens amongst deciduous Trees, but always place the Ever-greens in a *Wilderness*, or a separate Part of the *Wilderness* by themselves, and that chiefly in Sight, because these afford a continual Pleasure both in Summer and Winter, when in the latter Season, the deciduous Trees do not appear so agreeable.

4. The Walks must also be proportion'd to the Size of the Ground, and not make large Walks in a small *Wilderness*, (nor too many Walks tho' smaller) whereby the greatest Part of the Ground is employ'd in Walks: Nor should the grand Walks of a large *Wilderness* be too small; both of which are equally faulty. These Walks should not be entered immediately from those of the Pleasure-Garden, but rather be led into by a small private Walk, which will render it more entertaining: Or if the large Walk be turned in Form of a Serpent, so as not to shew its whole Extent, the Mind will be better pleased than if the Whole were open to the View.

The usual Method of contriving *Wildernesses* is, to divide the whole Compass of Ground, either into Squares, Angles, Circles, or other Figures, making the Walks corre-

spondent.

spondent to them ; planting the Sides of the Walks with Hedges of *Lime, Elm, Hornbeam, &c.* and the Quarters within are planted with various Kinds of Trees promiscuously without Order. But this can by no means be esteemed a judicious Method, because hereby there will be a great Expence in keeping the Hedges of a large Wilderness in good Order, which instead of being beautiful, are rather the reverse ; for as these Parts of a Garden should, in a great measure, be designed from Nature, so whatever has the stiff Appearance of Art, does by no means correspond therewith. Besides these Hedges are generally train'd up so high as to obstruct the Sight from the Trees in the Quarters, which ought never to be done.

In the next place, the Walks are commonly made to intersect each other in Angles, which also shews too formal and trite for such Plantations, and are by no means comparable to such Walks as have the Appearance of *Meanders* or *Labyrinths*, where the Eye can't discover more than twenty or thirty Yards in Length ; and the more these Walks are turned, the greater Pleasure they will afford. These should now and then lead into an open circular Piece of Grass ; in the Center of which may be placed either an *Obelisk, Statue, or Fountain* ; and if in the Middle Part of the Wilderness there be contrived a large Opening, in the Center of which may be erected a *Dome or Banqueting House*, surrounded with a green Plot of Grass, it will be a considerable Addition to the Beauty of the Place.

From the Sides of the Walks and Openings, the Trees should rise gradually one above another to the

Middle of the Quarters, where should always be planted the largest growing Trees, so that the Heads of all the Trees will appear to the View ; but their Stems will be hid from Sight, which will have a vastly different Effect from the common Method, where the Trees are planted large and small, without any Order, so that many times the largest are next the Sight, and small ones behind them, just according as it happens ; in which manner the small ones, being overhung and shaded, do seldom thrive well.

But in order to plant a Wilderness with Judgment, the usual Growth of all the different Sorts of Trees should be well considered, that each may be placed according to the Magnitude to which they generally grow ; otherwise, if they are at first planted one above another, as before directed, they will not continue to grow in this Order many Years ; for some Sorts will greatly out-grow the others, and thereby render the Plantation less beautiful ; but when they are placed according to their usual manner of growing, they will always continue nearly in the same Order, which renders them very entertaining to the Sight.

These Trees should also be allow'd a proportionable Distance, according to their Growth, and not crowded so close as is commonly practis'd, whereby there are four times the Number of Trees planted which need be ; and this close planting causes them to aspire to a great Height, but then they want the noble Diffusion of Branches, which is vastly more agreeable to the Sight than a Parcel of thin, taper Stems, with scarcely any Heads, as is too often the Case in some of the largest Gardens

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dens in *England*, where, instead of looking at a noble Parabola of Trees, with their spreading globular Heads, a Parcel of naked Stems present themselves to View; and where the Trees are thus crowded they never thrive half so well, nor will they continue half so long, as those which are allow'd a proper Distance; for their Roots running and interfering with each other, do draw the Nourishment away faster than the Ground can supply them; which causes their Leaves to be small, and, in dry Seasons, to decay and fall off long before their usual Time, and thereby renders the Plantation less agreeable.

In the Distribution of these Plantations, in those Parts which are planted with deciduous Trees, may be planted next the Walks or Openings, *Roses*, *Honeysuckles*, *Spirea frutex*, and other Kinds of low flowering Shrubs, which may be always kept very dwarf, and may be planted pretty close together; and at the Foot of them, near the Sides of the Walks, may be planted *Primroses*, *Violets*, *Daffodils*, and many other Sorts of Wood Flowers, not in a strait Line, but rather to appear accidental, as in a natural Wood. Behind the first Row, of Shrubs should be planted *Syringa's*, *Cytissus's*, *Althæa frutex*, *Mezerion's*, and other flowering Shrubs of a middle Growth, which may be back'd with *Laburnums*, *Lilacs*, *Gelder Roses*, and other flowering Shrubs of large Growth; these may be back'd with many other Sorts of Trees, rising gradually to the Middle of the Quarters, from whence they should always slope down every Way to the Walks.

By this Distribution you will have the Pleasure of the flowering Shrubs near the Sight, whereby

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you will be regal'd with their Scent, as you pass thro' the Walks; which is seldom observed by those who plant Wildernesses: for nothing is more common than to see *Roses*, *Honey-Suckles*, and other small flowering Shrubs, placed in the Middle of large Quarters, under the Dropping and Shade of large Trees, where they seldom thrive; and if they do, the Pleasure of them is lost, because they are secluded from the Sight. If these Quarters are slightly dug every Winter, it will keep the Ground clean from noxious Weeds, and be a great Benefit to the Trees. And the Expence of doing this, where Labour is cheap, cannot be very considerable, unless in very great Plantations.

But beside these Grand Walks and Openings (which should always be laid with Turf, and kept well mowed) there should be some smaller Serpentine Walks through the Middle of the Quarters, where Persons may retire for Privacy; in which there need be nothing but the Ground of the Place made level and kept hoed to clear it from Weeds, which will be no great Trouble to do with a *Dutch Hoe*, which is broad, and will make great Riddance; and then rake them over to make them handsome. These Walks need not be very broad, but should be turned in such a manner as not to deviate far from the Middle of the Quarter, because there the Trees being largest, will afford the amplest Shade; six or eight Feet will be a sufficient Width for these Walks, in large Quarters; but in small ones, four Feet is full enough. By the Sides of these Private Walks may also be scattered some Wood-Flowers and Plants which

which, if artfully planted, will have a very good Effect.

In the general Design for these Wilderesses, it should not be studied to make the several Parts correspondent, for that is so formal and stiff, as to be now quite rejected; the greater Diversity there is in the Distribution of these Parts, the more Pleasure they will afford; and since, according to this Method of Designing and Planting, the different Parts never do present themselves to the same View, so it is no matter how different they are varied asunder; that Part of them which is most in View from the House or other Parts of the Garden, may be planted with Evergreens; but the other Parts may be planted with deciduous Trees in the foregoing manner.

The Part planted with Evergreens may be dispos'd in the following manner, *viz.* in the first Line next the great Walks, may be placed *Laurus Timus*, *Boxes*, *Spurge Laurel*, *Juniper*, *Savin*, and other dwarf Evergreens; behind these may be placed *Laurels*, *Hollies*, *Arbutus's*, and other Evergreens of a larger Growth; next to these may be placed *Alaternus's*, *Phillyrea's*, *Yews*, *Cypress's*, *Virginian Cedars*, and other Trees of the same Growth; behind these may be planted *Norway* and *Silver Firs*, the *True Pine*, and other Sorts of the like Growth; and in the Middle should be planted *Scotch Pines*, *Pinaster*, and other of the largest growing Evergreens, which will afford a most delightful Prospect, if the different Shades of their Greens are curiously intermix'd. And in order to render the Variety greater, there may be many Kinds of hardy Evergreens obtain'd from the North Parts of *America*,

as there are already some in *England*, which are very fit for this Purpose, and are mention'd in different Parts of this Book.

This manner of separating the Evergreens from the deciduous Trees, will not only make a much better Appearance, but also cause them to thrive far beyond what they usually do when intermix'd; therefore I should never advise any Person to plant them promiscuously together.

By what I have said concerning the Planting the Trees in Rows, one behind another, according to their different Growths, I would not have it understood, that I mean the placing them in strait Lines, which is too stiff and formal for these Plantations; all that is intended, is to place the Front Rows of Trees on each Side the Walks, at an equal Distance from the Side of the Walks; but the Lines of Trees (especially the three first) must turn in the same manner as the Walks; those behind may be placed after any manner, provided Care be taken to allow each sufficient Room to grow, and that there may appear no uneven Gaps in the Distance of their Heads, but that they may all rise gradually, so as to form a handsome Slope.

In small Gardens, where there is not Room for these magnificent Wilderesses, there may be some rising Clumps of Evergreens, so design'd as to make the Ground appear much larger than it is in reality; and if in these there are some Serpentine Walks well contrived, it will greatly improve the Places, and deceive those who are unacquainted with the Ground, as to its Size. These Clumps or little Quarters of Evergreens should be placed just beyond the plain Opening

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ing of Grass before the House, where the Eye will be carried from the plain Surface of Grass, to the regular Slope of Evergreens, to the great Pleasure of the Beholder; but if there is a distant Prospect of the adjacent Country from the House, then this should not be obstructed, but rather a larger Opening allow'd for the View, bounded on each Side with these rising Clumps, which may be extended to half the Compass of the Ground: And on the back Part from the Sight, may be planted the several Kinds of flowering Shrubs, according to their different Growths, which will still add to the Variety. These small Quarters should not be surrounded with Hedges for the Reasons before given for the larger Plantations; nor should they be cut into Angles, or any other studied Figures, but be design'd rather in a rural Manner, which is always preferable to the other for these Kinds of Plantations.

In Wilderesses there is but little Trouble or Expence after their first planting, which is an Addition to their Value; the only Labour required, is to mow and roll the large Grass Walks, and to keep the other Ground Walks free from Weeds. And in the Quarters if the Weeds are hoed down two or three times in a Summer, it will still add to their Neatness. The Trees should also be pruned to cut out all dead Wood or irregular Branches, where they cross each other, and just to preserve them within due Bounds; and, as was before observed, if the Ground be slightly dug between the Trees, it will greatly promote their Vigour. This being the whole Labour of a Wilderess, 'tis no Wonder they are so generally esteem'd, especially

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when we consider the Pleasure they afford.

SWEET-WILLIAMS; *vide* Caryophyllus Barbatus.

WILLOW; *vide* Salix.

WILLOW; the French; *vide* Chamænerion.



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XERANTHEMUM; Eternal Flower, or Ptarmica; *vulgò*.

The Characters are;

It hath a scaly Silver-colour'd Flower-cup; the Flower is dry; the Disk consisting of many plain Petals, having no Embryo's affixed to them, yet are included in the same Empalement with the Florets; the Embryo's afterwards become Seeds, each having a leafy Head.

The Species are;

1. XERANTHEMUM; *flore simplici, purpureo majore*. H. L. Eternal Flower, or Ptarmica, with a large single, purple Flower.

2. XERANTHEMUM; *flore pleno, purpureo, majore*. H. L. Eternal Flower, or Ptarmica, with a large double, purple Flower.

3. XERANTHEMUM; *flore simplici albo*. H. L. Eternal Flower, or Ptarmica, with a single, white Flower.

4. XERANTHEMUM; *flore pleno albo*. H. L. Eternal Flower, or Ptarmica, with a double white Flower.

5. XERANTHEMUM; *flore simplici, purpureo, minore*. Tourn. Eternal Flower, or Ptarmica, with a lesser, single, purple Flower.

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6. XERANTHEMUM; *flore purpureo, simplici minimo, semine maximo*. H. L. Eternal Flower, or Ptar-mica, with a very small, single, purple Flower, and a large Seed.

These Flowers were formerly much more cultivated in the *English* Gardens than at present, especially the two Sorts with double Flowers, which the Gardeners near *London* did cultivate in great Plenty for their Flowers, which they brought to Market in the Winter Season, to set in Glasses in Rooms, to supply the Place of other Flowers, which are not easy to be procured at that Season; for these being gather'd when they are fully blown, and carefully dry'd, will continue fresh and beautiful many Months: But as there are no other Colours in these Flowers but White and Purple, so the Gardeners had a Method of dipping them into various Tinctures, so as to have some of a fine Blue, others Scarlet, and some Red, which made a pretty Variety; and if they were rightly stain'd, and afterwards hung up till they were thorough dry, they would continue their Colours as long as the Flowers endur'd.

All these Sorts are propagated by Seeds; which should be sown on a warm Border in *August*, observing to water and shade the Ground, if the Season proves warm and dry, until the Plants are come up; after which they must be kept clear from Weeds, and in dry Weather should be now and then refresh'd with Water. When the Plants are about two Inches high, they should be prick'd out into another Border under a warm Wall, Pale or Hedge, at about four or five Inches Distance from each other. In this Place, the Plants will endure the Cold of our ordinary

Winters extremely well; and in the Spring, will require no farther Care but to keep them clear from Weeds; for they may remain in the same Place for good. In *June* they will begin to flower, and the Beginning of *July* they will be fit to gather for drying: But a few of the best and most double Flowers of each kind should be suffer'd to remain for Seed, which in about a Month's Time will be ripe, and the Plants will perish soon after, so that the Seeds must be annually sown in order to preserve them.

The Seeds of these Plants are many times sown in the Spring, but they seldom grow so well at that Season, nor will the Plants grow near so large, or produce near the same Quantity of Flowers as those which are sown in Autumn, for which Reasons that Time should be preferr'd. Besides, it often happens, that the Plants which do come up of the Spring-sowing, do rarely produce good Seeds, unless the Season proves very favourable.

XIPHION; Bulbous Iris, or Flower-de-Luce.

The Characters are;

It hath a Lily Flower, consisting of one Leaf, and shap'd exactly like that of the common Iris: the Pointal is furnish'd with three Leaves, but the Empalement turns to a Fruit, shap'd like that of the common Iris, and the Root is bulbous, or consists of many Coats.

The Species are;

1. XIPHION; *Persicum, praecox, flore variegato*. Tourn. Early Persian bulbous Flower-de-Luce, with a variegated Flower.

2. XIPHION; *angustifolium, flore albo, labio inferiori rectus aureo*. Boerb. Ind. Narrow-leav'd bulbous Iris, with a white Flower, and the

lower Part of the Lip of a yellow Colour.

3. XIPHION; *angustifolium, caruleo-violaceum, non odorum.* Boerh. Ind. Common narrow-leav'd bulbous Iris, with a blue, violet-colour'd Flower without Scent.

4. XIPHION; *angustifolium, flore luteo inodore.* Tourn. Narrow-leav'd bulbous Iris, with a yellow Flower without Scent.

5. XIPHION; *angustifolium, flore ex violaceo purpureo & caruleo pallescente variegato, notata.* Boerh. Ind. Narrow-leav'd bulbous Iris, with a Violet purple and pale Blue variegated Flower.

6. XIPHION; *angustifolium, petalis repandis albis, erectis dilutè caruleis, incumbentibus pallidè carulescentibus.* Boerh. Ind. Narrow-leav'd, bulbous Iris, whose Flower hath white Falls, the upright Leaves of a sky blue, and the under ones of a pale bluish Colour.

7. XIPHION; *angustifolium, petalis repandis aureis, incumbentibus pallidè flavis, erectis dilutè caruleis.* Boerh. Ind. Narrow-leav'd bulbous Iris, whose Flower hath yellow Falls, and the upright Leaves are of a sky blue Colour.

8. XIPHION; *angustifolium, flore majore dilutè caruleo.* Narrow-leav'd bulbous Iris, with a large sky blue Flower.

9. XIPHION; *angustifolium, flore majore, dilutè caruleo, lineis rubris eleganter striato.* Narrow-leav'd bulbous Iris, with a large sky blue Flower, elegantly strip'd with red.

10. XIPHION; *angustifolium, flore majore albo.* Narrow-leav'd bulbous Iris, with a large white Flower.

11. XIPHION; *angustifolium, flore majore albo, lineis dilutè caruleo, & pictis violaceo distincto* Narrow-leav'd bulbous Iris, with a large

white Flower, with sky blue Stripes, and spotted with Violet.

12. XIPHION; *angustifolium, flore majore saturatè violaceo.* Narrow-leav'd bulbous Iris, with a large deep violet-colour'd Flower.

13. XIPHION; *angustifolium, flore majore petalis repandis dilutè caruleis, erectis saturatè violaceo.* Narrow-leav'd bulbous Iris with a large Flower, whose Falls are of a sky blue, but the upright Petals are of a deep Violet Colour.

14. XIPHION; *angustifolium, flore majore, dilutè caruleo, petalis repandis flavis.* Narrow-leav'd bulbous Iris, with a large sky blue Flower with yellow Falls.

15. XIPHION; *angustifolium, flore majore, saturatius violaceo striis rubris eleganter variegato.* Narrow-leav'd bulbous Iris, with a deep Violet-colour'd Flower, beautifully strip'd with Red.

16. XIPHION; *angustifolium, flore majore, petalis repandis dilutè caruleo, erectis flavo.* Narrow-leav'd bulbous Iris, whose Flower hath pale blue Falls, but the upright Leaves are of a yellow Colour.

There are many other Varieties of this Flower, which have been of late Years obtain'd from Seeds: Their Numbers are every Year so much increas'd that way, that it would be endless to enumerate them all, therefore I shall proceed to their Culture; in which I shall first begin with the Method of raising them from Seeds, that being the Way to obtain new Varieties.

Having procur'd a Parcel of Seeds from good Flowers, the Beginning of September, you should provide some flat Pans or Boxes, which must have Holes in their Bottoms to let the Moisture pass off: These should be fill'd with fresh, light, sandy Earth, and the Seeds sown thereon

thereon pretty thick, observing to scatter them as equally as possible; then cover them over about half an Inch thick with the same light, fresh Earth, and place the Boxes or Pans where they may have the Morning Sun till eleven of the Clock, and if the Season should prove very dry, they must be now and then refresh'd with Water.

In this Situation they may remain until the Middle of *October*, when they should be remov'd into a more open Position, where they may have the full Sun most part of the Day; in which Place they must abide all the Winter, observing to keep them clear from Weeds and Moss, which at this Season is very apt to spread over the Surface of the Earth, in Pots, when they are expos'd to the open Air.

In the Spring the Plants will appear above-ground, when, if the Season is dry, they must be now and then refresh'd with Water, and constantly kept clear from Weeds; and as the Season advances, and the Weather becomes warm, they should be again remov'd into their former shady Situation, where they may enjoy the Morning Sun only. When the Plants begin to decay (which will be in *June*) they must be clear'd from Weeds and dead Leaves, and some fresh Earth sifted over them about half an Inch thick, still suffering them to abide in the same Situation all the Summer Season; during which time they will require no farther Care, but to keep them clear from Weeds until the Beginning of *October*, when they must be again remov'd into the Sun, and the Surface of the Earth lightly taken off, and some fresh Earth sifted over them.

In this Place they must remain all the Winter, as before; and in the Spring they must be treated as was directed for the former Year.

When the Leaves are decay'd, the Bulbs should be carefully taken up (which may be best done by sifting the Earth through a fine Sieve) and a Bed or two of good, light, fresh Earth should be prepar'd, into which the Bulbs must be planted, at about three Inches asunder each Way, and three Inches deep. These Beds must be constantly kept clean from Weeds and Moss, and in the Spring, just before the Plants come up, the Surface of the Beds should be stirr'd, and some fresh Earth sifted over them about half an Inch thick, which will greatly strengthen the Roots.

During the Spring and Summer they must be constantly weeded, and at *Michaelmas* the Earth should be again stirr'd, and some fresh sifted over the Beds again as before, observing in Winter and Spring still to keep the Beds clean, which is the whole Management they will require, and in *June* following the greatest Part of the Roots will flower; at which time you should carefully look over them, and put down a Stick by all those whose Flowers are beautiful, to mark 'em; and so soon as their Leaves are decay'd, these Roots may be taken up to plant in the Flower-Garden amongst other choice Sorts.

But the Nursery-beds should still remain, observing to keep them clear from Weeds, as also to sit fresh Earth over them, as was before directed; and the following Season, the remaining Part of the Roots which did not flower the

last Season, will now shew their Blossoms so that you may know which of them are worth preserving in the Flower-Garden, which should now be mark'd; and when their Leaves are decay'd, they must be taken up and planted with the other fine Sorts in an East-border of light, fresh Earth; but the ordinary Sorts may be intermix'd with other bulbous-rooted Flowers in the large Borders of the Pleasure-Garden, where, during their Continuance in Flower, they will afford an agreeable Variety.

But after these choice Flowers are obtain'd from Seeds, they may be increas'd by Off-sets as other bulbous Flowers are. These Off-sets should be planted in a separate Border from the blowing Roots, for one Year, until they have Strength enough to produce Flowers, when they may be plac'd in the Flower-Garden with the old Roots.

These Bulbs need not be taken up oftener than every other Year, which should always be done soon after their Leaves decay, otherwise they will send forth fresh Fibres, when it will be too late to remove them; nor should they be kept long out of the Ground; a Week or Fortnight is full enough; for when they are kept longer, their Bulbs are subject to shrink, which causes their Flowers to be weak the following Year.

The Earth which these Flowers thrive best in, is, a light, sandy Loam; and if it be taken from a Pasture Ground, with the Sward, and laid in a Heap until the Grass is thoroughly rotted, it will be still better, for these Bulbs do not delight in a rich, dunged Soil; nor should they be planted in a Situation where they may be too much

expos'd to the Sun, for in such Places their Flowers will continue but a few Days in Beauty, and their Roots are apt to decay; but in an East Border, where they have the Sun until Eleven of the Clock, they will thrive and flower extremely well, especially if the Soil be neither too wet or over dry: From the most beautiful of these Flowers, should be Seeds saved, and sown every Year, which will always furnish new Varieties, some of which will greatly exceed the original Kinds.

The *Persian Iris* is greatly esteem'd for the Beauty and extream Sweetness of its Flowers, as also for its early Appearance in the Spring, it generally being in Perfection in *February* or the Beginning of *March*, according to the Forwardness of the Season, at which time there are few other Plants in Beauty.

This may be propagated by Seeds, in the same Manner as the other Sorts, but the Boxes in which they are sown, should be put under a Garden Frame in Winter, to shelter them from hard Frosts, because while the Plants are young they are somewhat tender: From the Seeds of this Kind, I could never obtain any Varieties, their Flowers being always the same.

These Plants are also propagated by Off-sets in the same Manner as the other Sorts; but their Roots should not be transplanted oftener than every third Year, nor should they be ever kept out of the Ground long, because their Roots will intirely decay in a short time, so as not to be recovered again. This Sort was formerly more common in the Gardens near *London* than at present, which I suppose has been occasioned by the keeping the Roots
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above Ground too long, which destroy'd them.

XYLON; The Cotton Plants.

The Characters are;

The Flower consists of one Leaf, cut into several Segments almost to the Bottom, and is of the expanded Bell-shape; from the Center rises a hollow pyramidal Tube, adorned and loaded for the most part with Chives; from the Empalement shoots up the Pointal fixed like a Nail in the Bottom of the Flower; and of the Tube, which is afterwards changed into a roundish Fruit, divided into four or more seminal Cells, gaping at the Top, and enclosing Seeds covered over with, and wrapped within that soft ductile Wool, commonly known by the Name of Cotton.

The Species are;

1. **XYLON**; *sive Gossypium herbaceum*. J. B. Herb or Shrubby Cotton.

2. **XYLON**; *Americanum, præstantissimum, semine virescente*. Ligon. The most Excellent American Cotton, with a greenish Seed.

3. **XYLON**; *sive Gossypium, frutescens annuum, folio vitis ampliori, quinquifido, Insula Providentiæ*. Pluk. Phyt. Annual Shrubby Cotton of the Island of Providence, with a large quinquifid Vine Leaf.

4. **XYLON**; *arboreum*. J. B. The Tree Cotton.

5. **XYLON**; *arboreum, flore flavo*. Tourn. Tree Cotton, with a yellow Flower.

There are several other Varieties of this Plant in the warm Parts of the East and West Indies, where they grow in great Plenty, some of which have been observed by the Curious in Botany; but others have escaped their Notice; however, these being what I have observed growing in the European Gardens, I shall not trouble the

Reader with an Enumeration of the other Varieties.

The first Sort here mention'd, is cultivated plentifully in Candy, Lemnos, Cyprus, Malta, Sicily and at Naples; as also between Jerusalem and Damascus, from whence the Cotton is brought annually into these Northern Parts of Europe. It is sown upon tilled Grounds in the Spring of the Year, and cut down and reaped in Harvest, as Corn with us; the Ground must be tilled and sown again the succeeding Year, and managed in such Sort, as we do the Tillage for Corn and other Grain: It is an annual Plant, perishing when it hath perfected its Fruits as many others do.

This Cotton is the Wooll which encloses or wraps up the Seeds, and is contained in a kind of brown Husk or Seed-Vessel, growing upon this Shrub; for it is from this Sort, that the vast Quantities of Cotton are taken which furnish our Parts of the World: It is brought from the Islands, where the Natives take great Care of its Culture: There are several Sorts of Cotton sold, which chiefly differ according to the Countries from whence they come, and the various Preparations made of them; the first is the Cotton in the Wooll, that is to say, that which comes from the Shell, from which only we take the Seed; those Cottons come from Cyprus, Smyrna, &c. The second, is the Cotton in the Yarn, which comes from Damascus; the Jerusalem Cottons which are called Bazac's, are the best which are sold. The second and third Sorts are also Annual, these are cultivated in the West-Indies in great Plenty; but the fourth and fifth Sorts grow in Egypt; these abide many Years, and often arrive

to be Trees of great Magnitude, from which the Inhabitants are annually furnish'd with great Quantities of *Cotton*. One of these Trees has a purplish, and the other a yellow Flower, which I believe is the only Difference between them.

All these Sorts are preserved in the Gardens of those who are curious in collecting rare Plants. They are easily raised from Seeds (which may be obtain'd fresh from the Places of their Growth;) these must be sown upon a Hot-bed early in the Spring, and when the Plants come up, they must be transplanted out each into a separate small Pot, filled with light fresh Earth, and plunged into a moderate Hot-bed of Tanners Bark, observing to water and shade them until they have taken Root, after which they should have Air and Water in Proportion to the Warmth of the Season, and the Heat of the Bed in which they are placed: For if they are too much drawn, by keeping the Glasses close down in the Day-time, they will run up very weak and slender, so as not to be able to support themselves, and if they are too much exposed to the Air, they will not make any Progress in their Growth.

When the Plants are so far advanced, as to fill the Pots with their Roots, they should be shaken out and put into larger Pots, which should be filled with the same light fresh Earth, and again plunged into the Hot-bed and managed as before; thus from time to time as the Plants advance, they must be removed into larger Pots, and as the Warmth of the Season increases, so they should have a greater Share of Air; and when they are too tall to continue under the Glasses of the Hot-bed Frame, they

must be removed into the Stove and placed in the Tan-bed, amongst other tender Exotick Trees and Shrubs; in which Place the annual Sorts will produce their Flowers in Autumn; but they rarely produce Pods in this Country.

The Tree Kinds must be continued in this Bark Stove all the Winter, and if they are placed with the *All-spice*, *Sea-side Grape*, and such other *West-Indian* Trees, observing to keep the Air of the House about ten Degrees above the temperate Heat mark'd on Mr. *Fowler's* Botanical Thermometers, they will thrive very well, provided they are often refreshed with Water.

XYLON ARBOREUM; *vide* Ceiba.



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YEW TREE; *vide* Taxus.

YUCCA; The Indian Yucca; *vulgô*.

The Characters are;

It hath the Appearance of an Aloe, the Leaves ending in a sharp Point, but will grow in the Habit of a Tree; The Flower consists of one Leaf, which is Bell-shap'd, cut into six Segments and naked, these are produced on long Spikes; the Ovary which is in the Center of the Flower, afterwards becomes a tricapsular Fruit as in the Aloe.

The Species are;

1. YUCCA; *foliis Aloes*. C. B. P. The common Yucca.

2. YUCCA; *foliis filamentosis*. *Moriss*. Yucca with Threads growing from the Leaves.

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3. *YUCCA*; *Arborea*. The Tree *Yucca*.

4. *YUCCA*; *Draconis folio serrato*. *H. Elth.* *Yucca*, with Leaves like those of the Dragon Tree.

The first of these Plants is pretty hardy, and when grown strong, will endure the Cold of our ordinary Winters in the open Air very well, provided it be planted on a dry Soil: This commonly produces its Flowers every Year, which grow very sparsely on the Stalks, and are less beautiful than those of the Tree Sort, which are produced in a long, close Spike, and make a very beautiful Appearance; but these do not flower oftener than once in four or five Years, which is always in Autumn, so that they never produce any Seeds in this Country.

The threaded Sort is not so common as the others in the *English* Gardens; but as it is a Native of *Virginia*, it might be easily procured in Plenty from thence. The fourth Sort hath been raised of late Years from Seeds which came from thence, and is now pretty common in *England*; but the Plants are not as yet arrived to Maturity enough to produce Flowers in *England*; so that I cannot say how they differ from those of the other Sorts.

All these Plants are either propagated by Seeds, when obtained from Abroad, or else from Off-sets or Heads taken from the old Plants, after the Manner of *Aloes*.

When they are raised from Seeds, they should be sown in Pots filled with light fresh Earth, and plunged into a moderate Hot-bed, where the Plants will come up in five or six Weeks after, and when they are two or three Inches high, they should be transplanted each into a

Z I

separate small Pot filled with light fresh Earth, and plunged into the Hot-bed, where the Plants should have Air and Water in Proportion to the Warmth of the Season, and the Bed in which they are placed.

In *July*, they should be inured by degrees to bear the open Air, into which they must be removed, to harden them before Winter, placing them in a well-sheltered Situation, where they may remain until the Beginning of *October*, when they must be removed into the Greenhouse, where they may be ranged amongst the hardier Sorts of *Aloes*, and should be treated in the same Manner as hath been already directed for them, to which the Reader is desired to turn for further Instructions.

When these Plants have acquired Strength, they may be afterwards turned out into a warm Border, where they will endure the Cold of our ordinary Winters very well, especially the two first Sorts; and, I believe, the other two Sorts will bear the Cold pretty well, after they are grown strong and woody in their Stems.

The Off-sets taken from the old Plants should be laid in a dry Place for a Week or ten Days before they are planted, that their Wounds may heal, otherwise they will be subject to rot with Moisture.



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ZINZIBER; Ginger.

The Characters are;

The Flower (for the most part) consists of five Leaves, which are
 L 1 4 shap'd

shap'd somewhat like those of the Iris; these are produc'd in a Head or Club, each coming out of a separate leafy Scale: The Ovary afterwards becomes a triangular Fruit, having three Cells which contain the Seeds.

The Species are;

1. ZINZIBER; C. B. P. The common Ginger.

2. ZINZIBER; *Latifolium*; *Sylvestre*. H. L. Broad-leav'd wild Ginger, or Zerumbeth.

The first of these Plants is cultivated in the warm Parts of the *West-Indies* in great Plenty, from whence we are annually furnish'd with the dried Roots for Use. The second Sort is most common in the *East-Indies*, tho' it grows wild in some Parts of the *West-Indies*; there are small Quantities of this Root brought into *Europe* for medicinal Use, but it is never used in the Kitchen as the other.

These Plants are preserved as Curiosities in the Gardens of those who delight in rare Plants: They are both propagated by parting of their Roots; the best time for which is in the Spring, before they begin to shoot, when each large Root may be divided into several Parts, observing always to preserve two or three Eyes to each Piece: These should be planted into Pots filled with rich, light Earth, and plunged into a Hot-bed of Tanners Bark, where they must be frequently refresh'd with Water, and in hot Weather the Glasses should be rais'd with a Brick, to give them Air in proportion to the Warmth of the Season, and the Heat of the Bed in which they are placed; for when their Leaves are come up, if they are too much drawn, they will grow very tall and weak, and the Roots will make but very indifferent Progress. But

when they have a due Proportion of Heat, Moisture, and free Air, their Roots will thrive so fast, as in one Season, from a small Head to spread over a large Pot, and sometimes will produce Flowers in this Country.

But these Plants must be constantly kept in a Hot-bed of Tanners Bark, for they are too tender to endure the open Air in *England*, in the warmest Part of Summer; and in Winter they must be placed in a Bark Stove: for altho' their Leaves do decay in Autumn, and their Roots seem to remain in an unactive State most part of the Winter; yet, if they are not preserved in a very warm Place during that Season, they will entirely rot, as I have more than once observed: Nor do these Roots abide the Winter so well when placed upon Boards in the warmest Stove, as when they are plunged in the Bark Bed, tho' they are preserved in the same Degree of Warmth; which I conceive to be owing to the Moisture of the Bark, which in Fermentation ascends, and entering the Holes at the Bottom of the Pots, affords an agreeable Nourishment to the Roots, preserving them always plump and full; whereas those in a dry Stove, do often shrink for want of Moisture, and so many times decay; for it is not very safe to give them much Water after their Leaves are decay'd, because they are very apt to rot with too much Moisture at that Season.

When their Leaves are decay'd, is the proper Time to take up these Roots; but those that are design'd to plant again, should not be disturb'd till the Spring, just before they begin to shoot; which, as was before observed, is the best Time

Time to transplant them, because they soon after send forth their Fibres, which will preserve them from rotting.

ZIZIPHUS; the Jujube.

The Characters are ;

The Flower consists of several Leaves, which are placed circularly, and do expand in Form of a Rose, out of whose Empalement rises the Pointal, which afterwards becomes an oblong, fleshy Fruit, shap'd like an Olive, including a hard Shell divided into two Cells, each containing an oblong Nut or Kernel.

The Species are ;

1. ZIZIPHUS ; *Dod.* The common manured Jujube.

2. ZIZIPHUS ; *Sylvestris. Tourn.* The wild Jujube.

3. ZIZIPHUS ; *que Jujube Americana, Spinosa, Loti Arboris foliis & facie, fructu rotundo parvo dulci. Hort. Beaumont.* Prickly American Jujube, with Leaves like the Nettle Tree, and small, round, sweet Fruit, commonly called in the West-Indies, Mangosteen.

4. ZIZIPHUS ; *argenteo Zeylanica, spinis carens, Walæmbilla Zeylanensis dicta. C. B. P.* Silver-leav'd Jujube of Ceylon without Spines, commonly called, Walæmbilla.

The first of these Plants is cultivated in the Gardens of Italy, and the South Parts of France, from whence the Fruit was formerly brought into England for medicinal Use; but of late Years it has been very little used in the Shops, so that there is rarely any of it brought over at present.

In those warm Countries they preserve the Fruit for the Table in the Winter Season, when few other Kinds are in Perfection, at which Time these, and Services, and some other Sorts, do furnish their Deserts.

The Fruit is somewhat like a small Plum, but it has not a great Share of Flesh upon the Stone, but it having an agreeable Flavour, is by some Persons greatly esteem'd.

The second Sort grows wild in the Hedges in the South of France, Italy, and Spain, but in these colder Countries it is preserved in the Gardens of those who are curious in collecting of the various Kinds of Trees and Shrubs.

These Plants may be propagated by putting their Stones into Pots of fresh, light Earth, soon after their Fruits are ripe, and in Winter they should be placed under a common Hot-bed Frame, where they may be shelter'd from severe Frost: In the Spring these Pots should be plunged into a moderate Hot-bed, which will greatly facilitate the Growth of the Seeds; and when the Plants are come up, they should be inured to the open Air by Degrees, into which they must be removed in June, placing 'em near the Shelter of a Hedge, and in very dry Weather they must be frequently refresh'd with Water.

In this Situation they may remain until the Beginning of October, when they must be removed either into the Green-house, or placed under a Hot-bed Frame, where they may be defended from Frost, but should have as much free Air as possible in mild Weather.

During the Winter Season they should be now and then refresh'd with Water; but after their Leaves are fallen (as they always shed them in Winter) they must not be over-water'd, which would rot the tender Fibres of their Roots, and cause the Plants to decay.

In March, just before the Plants begin to shoot, they should be transplanted, each into a separate small

small Pot, filled with fresh, light Earth, and if they are plunged into a moderate Hot-bed, it will greatly promote their taking Root; but in *May* they must be inured to the open Air by Degrees, into which they should be soon after removed.

Thus these Plants should be managed while young, during which Time they are tender, but when they are three or four Years old, they may be planted in the full Ground where, if they have a dry Soil, and a warm Situation, they will endure the Cold of our ordinary Winters very well.

These Plants may be also propagated by Suckers, which the old ones do many times send forth from their Roots, but these are seldom so well rooted as those produced from Seeds, and do seldom make so good Plants, for which Reason they are but rarely propagated that Way.

The third Sort is very common in *Barbados*, *Jamaica*, and the other warm Parts of *America*, from whence I have several times received the Seeds, which do generally rise very freely on a Hot-bed; but the Plants being very tender, require the Help of a Bark-bed constantly, without which they will not make any Progress; and in Winter they must be placed in the Bark-Stove, where, if they are frequently refresh'd with Water, they will thrive extremely well. There are several Plants of this Kind in the Gardens of the Curious, but I have not observed any to produce Flowers as yet.

The fourth Sort was brought into *England* from some curious Garden in *Holland* many Years ago; this was rais'd in the Gardens of *Mynheer Van Beaumont*, from Seeds, which he receiv'd from *Cey-*

lon, and since hath been communicated to many curious Persons in *Holland* and *England*. There is no Way as yet found successful to propagate this Plant, but from Seeds, which being never produced in these cold Countries, and but rarely brought from Abroad, is the Reason it is not very common in the *European* Gardens at present.

This is preserved in Pots of light, fresh Earth, and placed in a Stove in Winter, where it may be kept in a moderate Warmth, and must be frequently refresh'd with Water, with which Culture the Plants will thrive very well; but I have not seen 'em produce any Flowers as yet in *England*, though there are several pretty old Trees in the Gardens at *Hampton-Court*.

Omitted under the Article,
FABA; Beans.

There are four Sorts of *Beans* commonly planted in Gardens, viz. The small *Lisbon*, the *spanish*, the *Sandwich* and *Windsor Beans*. The first and second Sorts are usually planted in *October* and *November*, under warm Walls or Hedges, to have them early; where, if they stand through the Winter, they will produce *Beans* early in the Spring: Or they may be planted close in Beds, in some Piece of Ground that is well defended from the *North* and *East* Winds; and being arch'd over with Hoops or Withies, may be cover'd, in very hard Frosts, with Mats and Straw; and in the Spring these Plants may be transplanted into warm Borders, by which means your Crop will be secur'd from Injuries of Frost; and if Care be taken in transplanting them, not to break their Roots, and also to water them, if
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the Season proves dry, until they have taken fresh Root, they will bear as plentiful a Crop as those which remain'd where they were at first planted, with this Difference, that they will be a Fortnight later. The *Lisbon Bean* is chiefly preferr'd to the *Spanish*; and the best way is to procure fresh Seeds from Abroad, at least every other Year, for they are subject to degenerate in a few Years in *England*, not in Goodness, but only in their Earliness.

The *Sandwich* and *Windsor Beans* are seldom planted before *Christmas*, but especially the *Windsor*, which is most subject to be hurt by Cold of any of the Kinds.

These *Beans* should have an open Exposure, and require to be planted at a greater Distance than the two early Kinds; for if they are planted in shady Places, or too close, they will grow to a great Height, but seldom produce many *Beans*. The usual Distance for these (if in an open Situation) is two Foot and an half Row from Row, and four Inches in the Rows; but if the Place is closely surrounded with Hedges, Walls, or tall Trees the Distance must be greater; the Rows should then be three Foot apart, and the *Beans* six Inches distant in the Rows. The *Sandwich Beans* being hardier than the *Windsor*, are usually planted about *Christmas*, to succeed the forward Crops; and these although at present but in little Request, yet are very serviceable, being plentiful Bearers, and very little inferior ei-

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ther in Size or Goodness to the *Windsor*.

In the Middle of *January*, if the Weather is open and good, you may plant your first Crop of *Windsor Beans*, which will succeed the *Sandwich*, and every three Weeks make a fresh Plantation until the middle of *May*, in order to preserve a Succession through the Season: Indeed there are some People who are very fond of *Beans*, which plant even in *June*, but unless the Soil is very strong and moist, or the Season proves wet or cold, they seldom succeed well; for in hot dry Weather (which commonly happens in *July*) the Insects infest these Plants very much, and often destroy them quite, so that I have known large Quarters of *Beans* to dye away without producing one single *Bean*. There are others who advise the cutting down of *Beans*, in order to cause them to produce fresh Shoots from the Bottom for a late Crop; but this seldom answers the Trouble, for they are liable to the above-mentioned Inconveniencies much more than a fresh planted Crop.

There is an Error very common in most Gardners, which I can't help mentioning, that is their planting of *Beans* in the Allies of their *Asparagus-Beds*, which damages the two outer Rows of the *Asparagus* much more than the Value of the *Beans*.

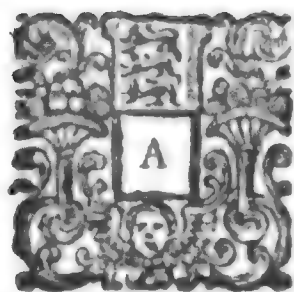
For the particular *Species* of *Beans*, see under the Article, *FABA*.

A N



A N I N D E X

Of the THINGS Treated of in the
Gardeners Dictionary.



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|---|--|
| <p>A
 BELE-TREE, <i>vide</i> Populus
 Abies
 Abrotanum
 Abrotanum Foemina, <i>vide</i> Santolina
 Absinthium
 Abutilon
 Acacia
 Acacia Germanorum, <i>vide</i> Prunus Sylvestris
 Acacia Virginiana, <i>vide</i> Pseudo-Acacia
 Acajou
 Acanthus
 Acer
 Acetosa
 Acetotella, <i>vide</i> Oxys
 Acinos
 Aconitum</p> | <p>Aconitum hyemale
 Acriviola
 Adhatoda
 Adiantum
 Adonis
 Æschynomene, <i>vide</i> Mimosa
 African Marigolds, <i>vide</i> Tagetes
 Ageratum
 Agnus Castus, <i>vide</i> Vitex
 Agrimonia
 Agrimony, <i>vide</i> Agrimonia
 Hemp Agrimony, <i>vide</i> Eupatorium
 Alaternoides
 Alaternus
 Alcea
 Alchymilla
 Alder-tree, <i>vide</i> Alnus
 Berry-bearing Alder, <i>vide</i> Frangula
 Alexander, <i>vide</i> Smyrnium
 Alkekengi
 Allieluja, <i>vide</i> Oxys</p> |
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Allium,

I N D E X.

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|---|--|
| <p> Allium
 Almond-tree, <i>vide</i> Amygdalus
 Almond Dwarf, <i>vide</i> Persica
 Alnus
 Aloe
 Althæa
 Alysson
 Amaranth, <i>vide</i> Amaranthus
 Amaranthus
 Amaranthoides
 Liquid Amber, <i>vide</i> Styrax
 Ambrosia
 Ammi
 Amomum Plinii, <i>vide</i> Solanum
 Amoris Pomum, <i>vide</i> Lycopersicon
 Amygdalus
 Anacamperos
 Ananas
 Anapodophyllon
 Anchusa
 Androsæmum
 Anemone
 Anemone the Wood, <i>vide</i> Anemonoides
 Anemonospermous
 Anethum
 Angelica
 Bearing-berry Angelica, <i>vide</i> Aralia
 Angelica-tree, <i>vide</i> Aralia
 Anil
 Anise, <i>vide</i> Apium
 Anona
 Anonis
 Anthora, <i>vide</i> Aconitum
 Antirrhinum
 Aparine
 Apios
 Apium
 Apocynum
 Apple-trees, <i>vide</i> Malus
 Sweet-apple, <i>vide</i> Anona
 Custard-apple, <i>vide</i> Anona
 Male Balsam-apple, <i>vide</i> Momordica
 Paradise-apple, <i>vide</i> Malus
 Star-apple, <i>vide</i> Anona
 Sowre-apple, <i>vide</i> Anona
 Water-apple, <i>vide</i> Anona
 Fig-apple, <i>vide</i> Malus
 Apples of Love, <i>vide</i> Lycopersicon </p> | <p> Mad-apples, <i>vide</i> Melongena
 Thorn-apple, <i>vide</i> Stramonium
 Apricock, <i>vide</i> Armeniaca
 Aquifolium
 Aquilegia
 Aralia
 Arbor Camphorifera, <i>vide</i> Camphora
 Arbor Coral, <i>vide</i> Corallodendron
 Arbor Judæ, <i>vide</i> Siliquastrum
 Arbor Virginiana
 Arbor Zeylanica
 Arbours
 Arbutus
 Arch-angel, <i>vide</i> Lamium
 Argemone
 Aria Theophrasti, <i>vide</i> Cratægus
 Arisarum
 Aristolochia
 Armeniaca
 Arrach, <i>vide</i> Artiplex
 Artemisia
 Artichoke
 Jerusalem Artichoke, <i>vide</i> Corona Solis
 Arse-smart, <i>vide</i> Persicaria
 Arum
 Arundo
 Asarabacca, <i>vide</i> Asarum
 Asarum
 Asclepias
 Ascyrum
 Ash-tree, <i>vide</i> Fraxinus
 Asparagus
 Aspen-tree, <i>vide</i> Populus
 Asperula
 Asphodel, <i>vide</i> Liko Asphodelus
 Asphodelus
 Asplenium
 Aster
 Asteriscus
 Astragalus
 Avens, <i>vide</i> Caryophyllata
 Avenues
 Aurantium
 Auricula Muris
 Auricula Urfi Myconi, <i>vide</i> Verbascum
 Azedarach
 Azerole, <i>vide</i> Mespilus. </p> |
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B.

I N D E X.

B

- B** Alustia, *vide* Punica
 Balauſtium, *vide* Punica
 Ballote
 Balm, *vide* Meliſſa
 Molucca Balm, *vide* Molucca
 Turkey Balm, *vide* Moldavica
 Balfam-apple, *vide* Balfamina
 Male Balfam-apple, *vide* Momordica
 Balfamita
 Bamia Moſchata, *vide* Ketmia
 Banana, *vide* Muſa
 Bane-berries, *vide* Chriſtophoriana
 Barba Capræ, *vide* Ulmaria
 Barba Jovis
 Barbados Flower-fence, *vide* Poin-
 ciana
 Barbados Cherry, *vide* Malpighia
 Barberry-tree, *vide* Berberis
 African Barberry, *vide* Euonymus
 Barley, *vide* Hordeum
 Naked Barley, *vide* Triticum
 Barren-wort, *vide* Epimedium
 Baſella
 Baſil
 Stone Baſil, or Wild Baſil, *vide* A-
 cinos
 Baſilicum, *vide* Ocymum
 Baſons
 Baſtard Ditany, *vide* Pſeudodiſtam-
 nus
 Batchelors Buttons, *vide* Lychnis
 Bauhinia
 Bay, *vide* Laurus
 Cherry Bay, *vide* Lauro Ceraſus
 Bead-tree, *vide* Azedarach
 White Beam-tree, *vide* Cratægus
 Beans, *vide* Faba
 French-beans, *vide* Phaſeolus
 Kidney-beans, *vide* Phaſeolus
 Kidney-bean-tree, *vide* Phaſcoloides
 Bean-trefoil, *vide* Cytisus
 Binding Bean-tree, *vide* Acacia
 Bean Caper, *vide* Fabago
 Bears-breech, *vide* Acanthus
 Bears-ear, *vide* Auricula Urſi
 Bears-foot, *vide* Helleborus
 Ladies Bed-ſtraw, *vide* Gallium
 Bee-flower, *vide* Orchis
 Beech-tree, *vide* Fagus
 Beet, *vide* Beta
 Belladonna
 Bell-flower, *vide* Campanula
 Bellis
 Bellis Major, *vide* Leucanthemum
 Hair Bells, *vide* Hyacinthus
 Benjamin-tree, *vide* Arbor Virgini-
 ana, &c.
 Herb Bennet, *vide* Caryophyllata
 Benzoin
 Berberis
 Beta
 Betonica
 Betonica Pauli, *vide* Veronica
 Betonica Aquatica, *vide* Scrophula-
 ria
 Betony, *vide* Betonica
 Star of Bethlehem, *vide* Ornithoga-
 lum
 Betula
 Bidens
 Bifolium
 Bignonia
 Bindweed, *vide* Convolvulus, Smi-
 lax, Quamoclit
 Bilberry Buſh, *vide* Vitis Idæa
 Birch-tree, *vide* Betula
 Birds-Eye, *vide* Adonis
 Birds-foot Trefoil, *vide* Lotus
 Birds-foot, *vide* Ornithopodium
 Birthwort, *vide* Ariſtolochia
 Biſhops-weed, *vide* Ammi
 Biſlingua, *vide* Ruſcus
 Biſtorta
 Black-thorn, *vide* Prunus
 Bladder-nut, *vide* Staphylodendron
 Blattaria
 Blights
 Blood Flower, *vide* Hæmanthus
 Blood-wort, *vide* Lapathum
 Blue-bottle, *vide* Cyanus
 Bontia
 Bonus Henricus, *vide* Chenopodium
 Boor-cole, *vide* Braſſica
 Borrage, *vide* Borrago
 Borrago
 Botrys, *vide* Chenopodium
 Box-tree, *vide* Buxus

Bramble

I N D E X.

Bramble-bush, *vide* Rubus
 Brank Urfin, *vide* Acanthus
 St. John's Bread, *vide* Siliqua
 Bristol Flower, *vide* Lychnis
 Brocoli, *vide* Brassica
 Brook-lime, *vide* Becabunga
 Spanish Broom, *vide* Spartium
 Green Broom, *vide* Cytisogenista
 Broom, *vide* Genista, Scoparia
 Brunella
 Brunselfia
 Bruscus, *vide* Ruscus
 Bryony, *vide* Brionia
 Bucks-horn, *vide* Coronopus
 Buck-wheat, *vide* Fagopyrum
 Bugloss, *vide* Buglossum
 Viper's Bugloss, *vide* Echium
 Bugle, *vide* Bugula
 Buglossum
 Bulbocastanum
 Bulbocodium
 Bullace-tree, *vide* Prunus
 Buphthalmum
 Bupleuroides
 Beupleurum
 Burdock, *vide* Lapathum
 Burnet, *vide* Pimpinella
 Bursa Pastoris
 Butcher's Broom, *vide* Ruscus
 Butter Burr, *vide* Petasitis
 Butomus
 Buxus

C

Cabbage, *vide* Brassica
 Sea Cabbage, *vide* Crambe
 Cabinet
 Cacalianthemum
 Cajou, *vide* Acajou
 Cashew Nut, *vide* Acajou
 Calabash-tree, *vide* Cucurbitifera
 Arbor
 Calamint, *vide* Calamintha
 Calamintha
 Water Calamint, *vide* Mentha
 Calceolus
 Caltha
 Caltha Palustris, *vide* Populago
 Calve's Snout, *vide* Antirrhinum
 Camara

Cammock, *vide* Anonis
 Camomile, *vide* Chamæmelum
 Campanula
 Camphire, *vide* Camphora
 Camphora
 Campion, *vide* Lychnis
 Candle-berry-tree, *vide* Gale
 Candy-tuff, *vide* Thlaspi
 Cannabis
 Canna Indica, *vide* Cannacorus
 Candy Carrot, *vide* Myrrhis
 Canterbury Bells, *vide* Campanula
 Capers, *vide* Capparis
 Capnoides
 Capnorchis
 Bean Caper, *vide* Fabago
 Caprifolium
 Capsicum
 Caracalla, *vide* Phaseolus
 Caraway, *vide* Carui
 Cardamindum, *vide* Acriviola
 Cardamine
 Cardiaca
 Cardinals Flower, *vide* Rapuntium
 Carduus
 Carduus Benedictus, *vide* Cnicus
 Carduus Fullonum, *vide* Dipfacus
 Carnation, *vide* Caryophyllus
 Spanish Carnation, *vide* Poinciana
 Carob, *vide* Siliqua
 Carrot, *vide* Daucus
 Deadly Carrot, *vide* Thapsia
 Candy Carrot, *vide* Myrrhis
 Carui
 Caryophyllata
 Caryophyllus
 Cassia
 Cassida
 Cassidony, *vide* Stæchas
 Mountain Cassidony, *vide* Elichrys-
 sum
 Cassine
 Cassioberry Bush, *vide* Cassine
 Castanea
 Castanea Equina, *vide* Hippocasta-
 num
 Catanance
 Cataputia Major, *vide* Ricinus
 Cataputia Minor, *vide* Tithymalus
 Catch-

I N D E X.

- Catch-fly, *vide* *Lychnis*
 Cats-foot, *vide* *Elichrysium*
 Cat-mint, *vide* *Cataria*
 Caucalis
 Cedar of Bermudas, *vide* *Juniperus*
 Cedar of Carolina, *vide* *Juniperus*
 Cedar of Virginia, *vide* *Juniperus*
 Cedar of Lebanon, *vide* *Cedrus Libani*
Cedrus Baccifera
Ceiba
 Celandine, *vide* *Chelidonium*
 Greater Celandine, *vide* *Chelidonium Majus*
 Lesser Celandine, *vide* *Chelidonium Minus*
Celastrus, *vide* *Alaternus*
 Celery, *vide* *Apium*
Celtis
 Great Centaury, *vide* *Centaureum Majus*
 Lesser Centaury, *vide* *Centaureum Minus*
Centinodium
Cepa
Cerasus
Ceratia, *vide* *Siliqua Edulis*
Cerfolium, *vide* *Chærefolium*
Cereus
Cerinthæ
 Ceterach, *vide* *Asplenium*
Chærophyllum
Chamæcerasus
Chamæcistus, *vide* *Helianthemum*
Chamæclema
Chamæcyparissus, *vide* *Santolina*
Chamædaphne, *vide* *Ruscus*
Chamædrys
Chamælea, *vide* *Thymelea*
Chamælea Tricoccus
Chamæmelum
Chamæmespilus, *vide* *Mespilus*
Chamæmorus
Chamenerion
Chamæpitys
Chamæriphe, *vide* *Palma*
Chamærubus, *vide* *Rubus*
Chamæscye, *vide* *Tithymalus*
 Chardon, *vide* *Cinara*
 Chaste-tree, *vide* *Vitex*
 Cheese Runnet, *vide* *Gallium*
Chelidonium Majus
Chelidonium Minus
Chelone
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 Melon Thistle, *vide* Melocactus
 Melongena
 Melopepo
 Melonry
 Mentha
 Mentha Cataria, *vide* Cataria
 Spik'd-mint, Spear-mint, Pepper-
 mint, Water-mint, Orange-mint,
 vide Mentha
 Menyanthes
 Mercurialis
 Mercury, *vide* Mercurialis
 Mespilus
 Methonica
 Meum
 Mezereon
 Mildew

Milfoil, *vide* Millefolium
 Miliun
 Milkwort, *vide* Polygala
 Millet, *vide* Miliun
 Miltwaste, *vide* Asplenium
 Mimosa
 Mirabilis Peruviana, *vide* Jalapa
 Mistletoe, *vide* Viscum
 Mitella
 Mock Orange, *vide* Syringa
 Mock Privet, *vide* Phillyrea
 Moldavica
 Molle
 Molucca Balm, *vide* Molucca
 Moly
 Momordica
 Money-wort, *vide* Nummularia
 Monks Rhubarb, *vide* Lapathum
 Moon-wort, *vide* Lunaria
 Monks-hood, *vide* Aconitum Cæru-
 leum
 Moon Trefoil, *vide* Medicago
 Morus
 Moss, *vide* Muscus
 Mother-wort, *vide* Cardiaca
 Mother of Thyme, *vide* Serpillum
 Mould
 Mountain-heath, *vide* Saxifraga
 Mouse-ear, *vide* Auricula Muris, al-
 so Myosotis
 Mucilage
 Mucilaginous
 Mullein, *vide* Verbascum
 Moth Mullein, *vide* Blattaria
 Mug-wort, *vide* Artemisia
 Mulberry-tree, *vide* Morus
 Mulberry-blight, *vide* Chenopodium
 Musa
 Muscari
 Muscipula, *vide* Lychnis
 Muscus
 Mushrooms
 Mustard, *vide* Sinapi
 Mithridate Mustard, *vide* Thlaspi
 Bastard Mithridate Mustard, *vide*
 Thlaspidium
 Tower Mustard, *vide* Turritis
 Myosotis
 Myrtis

Myrtle-

I N D E X.

Myrtle-tree, *vide* Myrtus

Myrtus

Myrtus Brabantica, *vide* Gale

N

N Apellus, *vide* Aconitum

Napus

Narcissus

Narcisso Leucoium

Naseberry-tree, *vide* Anona

Nasturtium

Nasturtium Indicum, *vide* Acriviola

Navel-wort, *vide* Cotyledon

Venus Navel-wort, *vide* Omphalodes

Navew, *vide* Napus

Nectarine

Nepeta, *vide* Cataria

Nettle, *vide* Urtica

Nettle-tree, *vide* Celtis

Dead-nettle, *vide* Lamium

Stinking Dead-nettle, *vide* Galeopsis

Deadly Nightshade, *vide* Belladonna

American Nightshade, *vide* Phyto-laca

Nicotiana

Nigella

Nightshade, *vide* Solanum

Enchanters Nightshade, *vide* Circea

Climbing Nightshade, *vide* Basella

Nil, *vide* Anil

Nissolia

Noli me tangere, *vide* Balsamina mas

Non-such, *vide* Lychnis

None-so-pretty, *vide* Geum

Nose-bleed, *vide* Millefolium

Northern Aspect

Nummularia

Peas Earth-nut, *vide* Lathyrus

Nursery

Nut, *vide* Nux

Physick-nut, *vide* Ricinoides

Nux Avellana

Nux Juglans

Nux Velicaria, *vide* Staphylodendron

Nymphæa

O

O Ak, *vide* Quercus

Ever-green Oak, *vide* Ilex

Oak of Jerusalem, *vide* Chenopodium

Oak of Cappadocia, *vide* Chenopodium

Obeliscotheca

Oculus Christi, *vide* Horminum Sylvestre

Ocymum

Oenanthe

Olea

Oily-grain, *vide* Sefamum

Olive-tree, *vide* Olea

Omphalodes

One-berry, *vide* Herba Paris

Onions, *vide* Cepa

Onobrychis

Opulus

Opuntia

Orach, *vide* Atriplex

Orange-tree, *vide* Aurantium

Mock Orange-tree, *vide* Syringa

Orange-mint, *vide* Mentha

Orchard

Orchis

Origanum

Organy, *vide* Origanum

Ornithogalum

Ornithopodium

Orobus

Orpine, *vide* Anacampteros

Wild Orrach or Orach, *vide* Chenopodium

Stinking Orrach, *vide* Chenopodium

Osier, *vide* Salix

Ox-eye, *vide* Bupthalmum

Oxyacantha, *vide* Berberis

Ox-lips, *vide* Primula Veris

Ox-eye Daisy, *vide* Leucanthemum

Oxys

P

P Idus, *vide* Cerasus

Pæonia

Paiglet,

I N D E X .

- Paigles, *vide* Primula Veris
 Paliurus
 Palma
 Palm-tree, *vide* Palma
 Palma Christi, *vide* Ricinus
 Pansies, *vide* Viola Tricolor
 Papaver
 Papaver Corniculatum, *vi.* Glaucium
 Papaver Spinosum, *vide* Argemone
 Papaya
 Papaw-tree, *vide* Papaya
 Paradise-apple, *vide* Malus
 Parietaria
 Parsley, *vide* Apium
 Bastard Parsley, *vide* Caucalis
 Fools Parsley, *vide* Cicuta
 Parterre
 Parsnip, *vide* Pastinaca
 Prickly-headed Parsnip, *vide* Echinophora
 Pasque Flower, *vide* Pulsatilla
 Passion Flower, *vide* Granadilla
 Pastinaca
 Herb Patience, *vide* Lapathum
 Pavia
 Pigeon-Pea, *vide* Phaseolus in Suppl.
 Peach, *vide* Persica
 Pear-tree, *vide* Pyrus
 Peas, *vide* Pisum
 Peas-everlasting, *vide* Lathyrus
 Heart-peas, *vide* Corindum
 Peas Earth-nut, *vide* Lathyrus
 Pellitory of the Wall, *vide* Parietaria
 Double Pellitory, *vide* Parmica
 Penny-royal, *vide* Pulegium
 Pentaphylloides
 Peony, *vide* Pæonia
 Pepo
 Pepper-mint, *vide* Mentha
 Water Pepper, *vide* Persicaria
 Periclymenum
 Periploca
 Periwinkle, *vide* Pervinca
 Persica
 Persicaria
 Pervinca
 Petasites
 St. Peter's-wort, *vide* Ascyrum
 Petroselinum, *vide* Apium
 Petty-whin, *vide* Anonis
 Peucedanum
 Phalangium
 Pheasants-eye, *vide* Adonis
 Phasecoloides
 Phaseolus
 Phillyrea, *vide* Alaternus
 Phlomis
 Physick-nut, *vide* Ricinoides
 Phytolacca
 Pile-wort, *vide* Chelidonia
 Pilosella, *vide* Hieracium
 Pimpinella
 Pinafter, *vide* Pinus Sylvestris
 Pine-tree, *vide* Pinus
 Ground Pine, *vide* Chamæpytis
 Pine-apple, *vide* Anana
 Pink, *vide* Caryophyllus
 Indian Pink, *vide* Caryophyllus Sinenfis
 Pinus
 Pimpillow, *vide* Opuntia
 Pipe-tree, *vide* Lilac
 Pudding Pipe-tree, *vide* Cassia Fistula
 Pipperidge-tree, *vide* Berberis
 Pishamin, *vide* Guajacana
 Pistachia, *vide* Terebinthus
 Pisum
 Pisum Cordatum, *vide* Corindum
 Plane-tree, *vide* Platanus
 Planta
 Plantain-tree, *vide* Musa
 Planting
 Bucks-horn Plantain, *vide* Coronopus
 Platanus
 Plumb-tree, *vide* Prunus
 Plumbago
 Poinciana
 Virginian Poke } *vide* Phytolacca
 Pork Physick }
 Polemonium
 Poison-tree, *vide* Toxicodendron
 Poley, *vide* Polium
 Polium
 Polianthus, *vide* Primula Veris
 Polygala

Polygo-

I N D E X.

Polygonatum
 Polypody, *vide* Polypodium
 Pomegranate, *vide* Punica
 Pomum Adami, *vide* Aurantium
 Populago
 Poplar-tree, *vide* Populus
 Spatling Poppy, *vide* Lychnis
 Poppy, *vide* Papaver
 Horned Poppy, *vide* Glaucium
 Prickly Poppy, *vide* Argemone
 Populus
 Porrum
 Portulaca
 Potatoes, *vide* Solanum
 None-so-pretty, *vide* Geum
 Primrose, *vide* Primula Veris
 Primrose-tree, *vide* Onagra
 Privet, *vide* Ligustrum
 Pruning of Trees
 Prunus
 Pseudo-acacia
 Pseudo-dictamnus
 Psyllium
 Ptarmica
 Pulegium
 Pulmonaria
 Pulsatilla
 Pumpkin } *vide* Pepo, Melopepo
 Pumpkin }
 Punica
 Purslain, *vide* Portulaca
 Pyracantha, *vide* Mespilus
 Pyrus

Q

Quamoclit
 Queen's Violet, *vide* Hesperis
 Quercus
 Quick
 Quick-beam, *vide* Sorbus Sylvestris
 Quicken-tree, *vide* Sorbus
 Quince-tree, *vide* Cydonia
 Quincunx Order
 Quinquefolium

R

Radish, *vide* Raphanus
 Horse Radish, *vide* Cochlearia

Rag-wort, *vide* Jacobaea; also Dorica
 Ragged Robin, *vide* Lychnis
 Rampions, *vide* Campanula radice esculente
 Ramsons, *vide* Allium Sylvestre
 Ranunculus
 Rapa
 Raphanus
 Rapuntium
 Raspberry-bush, *vide* Rubus
 Reed, *vide* Arundo
 Rest-harrow, *vide* Anonis
 Rhabbarbarum Monachorum, *vide* Lapathum
 Rhamnoides
 Rhamnus
 Monks Rhubarb, *vide* Lapathum
 Rhus
 Ribes
 Rice, *vide* Oryza
 Ricinoides
 Ricinus
 Ric, *vide* Secale
 Ripening of Fruits
 Rocambole, *vide* Allium Sativum
 Rocket, *vide* Eruca
 Corn Rocket, *vide* Erucago
 Rocket the Double, *vide* Hesperis
 Rock-rose, *vide* Cistus
 Golden Rod, *vide* Virga Aurea
 Hollow Root, *vide* Fumaria
 Rosa Sinensis, *vide* Ketmia Sinensis
 Gelder Rose, *vide* Opulus
 Rose-tree, *vide* Rosa
 Rose Root, *vide* Anacampteros
 Rosemary, *vide* Rosmarinus
 Rubia
 Rubus
 Rue, *vide* Ruta
 Goats Rue, *vide* Galega
 Wall Rue, *vide* Ruta Muraria
 Wild Rue, *vide* Harmala
 Cheese Runnet, *vide* Gallium
 Rupture-wort, *vide* Herniaria
 Ruscus
 Flowering Rush, *vide* Butomus
 Ruta
 Ruta Canina, *vide* Scrophularia

Ruta

I N D E X.

Ruta Muraria
Rye, *vide* Secale

S

SAbina
Saffron, *vide* Crocus
Meadow Saffron, *vide* Colchicum
Sage, *vide* Salvia
Sage-tree, *vide* Phlomis
Jerusalem Sage, *vide* Phlomis
Saint-Foin, *vide* Onobrychis
Shrubby wild Sage, *vide* Scordium
Salicaria
Salix
Corn-Sallet, *vide* Valerianella
Salt
Salvia
Salvia Agrestis, *vide* Scordium
Sambucus
Samphire, *vide* Crithmum
Sanguis Draconis, *vide* Palma
Sanicle, *vide* Geum
Sanicula
Santolina
Saponaria, *vide* Lychnis
Sappadilla, *vide* Anona
Sassafras-tree, *vide* Cornus
Satten Flower, *vide* Lunaria
Satureia
Satyrion, *vide* Orchis
Savin, *vide* Sabina
Savory, *vide* Satureia
Saxifraga
Golden Saxifrage, *vide* Chrysosplen-
num
Scabiosa
Sciatica Cress, *vide* Lepidium
Scilla
Sclarea
Scordium
Scorpioides
Scorpion Sena, *vide* Emerus
Scorzonera
Scrophularia
Scurvygrass, *vide* Cochlearia
Sea Buckthorn, *vide* Rhamnus
Sea Pink, *vide* Statice
Sea Lavender, *vide* Limonium
Secale
Securidaca

Sedum
Self-heal, *vide* Brunella
Senecio
Senna
Bastard Senna, *vide* Colutea
Bladder Senna, *vide* Colutea
Scorpion Senna, *vide* Emerus
Sensible Plant, *vide* Mimosa
Serpillum
Service-tree, *vide* Sorbus
Wild Service-tree, *vide* Cratægus
Sesamum
Shepherd's Purse } *vide* Bursa
Shepherd's Pouch } *vide* Pastoris
Shepherd's Teasel, *vide* Dipsacus
Sideritis
Siliqua
Siliquastrum
Virginian Silk, *vide* Periploca
Silver-bush, *vide* Barba Jovis
Sinapi
Sisarum
Skull-cap, *vide* Cassida
Skirret, *vide* Sisarum
Lady's Slipper, *vide* Helleborine
Sloe-tree, *vide* Prunus
Smallage, *vide* Apium
Smilax
Smyrnium
Snail Trefoil, *vide* Medica Coch-
leata
Snap-tree, *vide* Adhatoda
Snap-dragon, *vide* Antirrhinum
Snake-weed, *vide* Bistorta
Sneez-wort, *vide* Parmica
Snow
Snow-drop, *vide* Narcisso-Leucoi-
um
Snow-drop-tree, *vide* Arbor Zeyla-
nica
Double Soap-wort, *vide* Lychnis
Solanum
Solomon's-seal, *vide* Polygonatum
Sonchus
Sorbus
Sorrel, *vide* Acetosa
Southern-wood, *vide* Abrotanum
Sow-bread, *vide* Cyclan en
Sowre-fors, *vide* Anona

Sparrow-

I N D E X.

Sparrow-grass, *vide* Asparagus
 Spartium
 Spatling-poppy, *vide* Lychnis
 Speedwell, *vide* Veronica
 Spider-wort, *vide* Phalangium and
 Ephemeron
 Spike-mint }
 Spear-mint } *vide* Mentha
 Spignel, *vide* Meum
 Spina Alba, *vide* Mespilus
 Spinachia
 Spinage, *vide* Spinachia
 Spindle-tree, *vide* Euonymus
 Spleen-wort, *vide* Asplenium
 Rough Spleen-wort, *vide* Lonchitis
 Spiræa Frutex
 Spurge, *vide* Cataputia & Tithy-
 malus
 Bastard Spurge, *vide* Tithymaloides
 Spurge Laurel, *vide* Thymelæa
 Squashes, *vide* Melo-pepo
 Squills, *vide* Scilla
 Stachys
 Stag's-horn-tree, *vide* Rhus
 Staphylodendron
 Star-wort, *vide* Aster
 Star-flower, *vide* Ornithogalum
 Yellow Star-wort, *vide* Asteriscus
 Statice
 Stickadore, *vide* Stœchas
 Stock-gilly-flower, *vide* Leucoium
 Stœchas
 Dwarf Annual Stock, *vide* Hesperis
 Stone-crop, *vide* Sedum
 Stone-crop-tree, *vide* Vermicularis
 Frutex
 Stoves
 Stramonium
 Strawberry, *vide* Fragaria
 Strawberry-tree, *vide* Arbutus
 Strawberry Spinage, *vide* Cheno-
 podio-morus
 Styrax
 Suber
 Succory, *vide* Cichorium
 Gum Succory, *vide* Chondrilla
 Sugar Cane, *vide* Arundo
 Sweet Sultan, *vide* Cyanus
 Sumach, *vide* Rhus

Venice Sumach, *vide* Cotinus Cori-
 aria
 Little Sun-flower, *vide* Helianthe-
 mum
 Sun-flower, *vide* Corona Solis
 American Sun-flower, *vide* Chry-
 santhemum Corona Solis
 Swallow-wort, *vide* Asclepias
 Sweet-William, *vide* Caryophyllus
 Barbatus
 Sweet-Willow, *vide* Gale
 Sycamore, *vide* Acer Majus
 Symphytum
 Syringa

T

T Agetes
 Tamarind-tree, *vide* Tama-
 rindus
 Tamarisk-tree, *vide* Tamariscus
 Tamnus
 Tanacetum
 Tansey, *vide* Tanacetum
 Hig or High-taper, *vide* Verbascum
 Tare, *vide* Vicia
 Tarragon, *vide* Draco Herba
 Taxus
 Teasel, *vide* Dipsacus
 Terebinthus
 Teucrium
 Thalictrum
 Thapsia
 South-Sea Thea, *vide* Cassine
 Thistle, *vide* Carduus
 Distaff-thistle, *vide* Cnicus
 Blessed-thistle, *vide* Cnicus
 Melon-thistle, *vide* Melocactus
 Sow-thistle, *vide* Sonchus
 Globe-thistle, *vide* Echinopus
 Torch-thistle, *vide* Cereus
 Thlaspi
 Thlaspidium
 Thorn-apple, *vide* Stramonium
 Glastenbury-Thorn, *vide* Mespilus
 Haw-Thorn, *vide* Mespilus
 Egyptian-Thorn, *vide* Acacia
 Christ's-Thorn, *vide* Paliurus
 Evergreen-Thorn, *vide* Pyracantha
 Thrift, *vide* Statice
 Thuya

Thyme,

I N D E X.

Thyme, *vide* Thymus
Thymelæa
Mother of Thyme, *vide* Serpillum
Hairy wild Thyme, *vide* Serpillum
Lemon Thyme, *vide* Serpillum
Thyme the Marum, *vide* Marum
Thyme the Mastick, *vide* Mastichina
Tilia
Tinus
Tithymaloides
Tithymalus
Toad-flax, *vide* Linaria
Tobacco, *vide* Nicotiana
Tower Mustard, *vide* Turritis
Toxicodendron
Tragacantha
Tragopogon
Transportation of Plants
Travellers Joy, *vide* Clematitis
Trefoil, *vide* Trifolium
Birds-foot Trefoil, *vide* Lotus
Shrub Trefoil, *vide* Dorycnium
Bean Trefoil, *vide* Cytissus
Moon Trefoil, *vide* Medicago
Snail Trefoil, *vide* Medica Cochlearia
Chaste-Tree, *vide* Vitex
Mealy-Tree, *vide* Viburnum
Cork-Tree, *vide* Suber
Tree Germander, *vide* Teucrium
Trifolium
Tripolium, *vide* Aster
Triticum
True Love, *vide* Herba Paris
Trumpet Flower, *vide* Bignonia
Trumpet Honey-suckle, *vide* Periclymenum
Tuberosc, *vide* Hyacinthus Tuberosus
Tulip, *vide* Tulipa
Tulip-tree, *vide* Tulipifera
African Tulip, *vide* Hæmanthus
Turk's Cap, *vide* Liliū flore reflexo
Turkey Wheat, *vide* Mayz
Turkey Balm, *vide* Moldavica
Turnep, *vide* Rapa
French Turnep, *vide* Navew

Turnsole, *vide* Heliotropium
Turritis
Tussilago
Tutsan, *vide* Androsæmum
Twa-blade, *vide* Bifolium
V
Vaccaria, *vide* Lychnis
Vaccinia, *vide* Vitis Idæa
Valerian, *vide* Valeriana
Valeriana
Valeriana Græca, *vide* Polemonium
Valerianella
Venus Navel-wort
Veratrum
Verbascum
Verbena
Veronica
Vervain, *vide* Verbena
Vetch, *vide* Vicia
Bitter Vetch, *vide* Orobus
Horse-shoe Vetch, *vide* Ferrum Equinum
Liquorice Vetch, *vide* Apios
Chickling Vetch, *vide* Lathyrus
Medick Vetchling, *vide* Onobrychis
Crimson-grass Vetch, *vide* Nissolia
Hatchet Vetch, *vide* Securidica
Viburnum
Vine, *vide* Vitis
Vincetoxicum, *vide* Asclepias
Viola
Violet, *vide* Viola
Queen or Dame's Violet, *vide* He-speris
Lesser bulbous Violet, *vide* Narcisso-Leucoium
Viorna, *vide* Clematitis
Virga Aurea
Virgin's Bower, *vide* Clematitis
Virginian Silk, *vide* Periploca
Virginian Acacia, *vide* Pseudo-Acacia
Viscum
Vitex
Vitis
Vitis Idæa
Ulmus
Urtica

I N D E X.

W

Widow-wail, *vide* Chamælea
 Wake Robin, *vide* Arum
 Walks
 Walls
 Wall-flower, *vide* Leucoium
 Walnut, *vide* Juglans
 Water
 Water Calamint, *vide* Mentha
 Water Drop-wort, *vide* Oenanthe
 Water Germander, *vide* Scordium
 Water Lily, *vide* Nymphaea
 Water Pepper, *vide* Persicaria
 Water Horehound, *vide* Lycopus
 Way-faring Tree, *vide* Viburnum
 Dyers Weed, *vide* Luteola
 Yellow Weed, *vide* Luteola
 Weld, *vide* Luteola
 Wheat, *vide* Triticum
 Cow Wheat, *vide* Melampyrum
 Indian Wheat, *vide* Mayz
 Wilderness
 Willow-tree, *vide* Salix
 Willow Herb, *vide* Chamænerion,
and also Lyfimachia

Sweet-willow, *vide* Gale
 Willow-wort, *vide* Salicaria
 French Willow, *vide* Chamænerion
 Whin, *vide* Genista Spinosa
 Petty Whin, *vide* Anonis
 Sweet-Williams, *vide* Caryophyllus
 Barbatus
 Wind-flower, *vide* Anemone
 Winter Cherry, *vide* Alkekengi
 Woad, *vide* Isatis
 Wolf's Bane, *vide* Aconitum
 Wood of Life, *vide* Guaiacum
 Wood-roof, *vide* Asperula
 Wormwood, *vide* Absinthium

X

Xeranthemum
 Xiphium
 Xylon

Y

Yucca

Z

Zinziber
 Ziziphus

F I N I S.



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